

# COAL AGE

New York, April 8, 1920

Volume 17 Number 15

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## Forward—With the Industry

### An Announcement to Our Readers

**C**OAL producers today are facing many problems in both the technical and the economic phases of the industry.

The war and its aftermath of industrial reaction and readjustment have developed to a marked degree what some would call the ailments of the coal industry, and have focused public attention on the three-sided relationship of the operator, the miner, and the consumer. Added to the technical problems of mining have come labor problems, transportation questions, distribution difficulties. Even if the coal producer desired to hold himself aloof from these problems, he could no longer do it. Concerned, as he is, with a basic industry there are few of the practical problems in our complex industrial life which have not been put squarely up to him during the last few years.

The way out in answer to these problems, which are age-old in principle, but new in complexity, lies in the study, exchange of thought, development of ideas, education, and the application of sound economic principles—in a word, just plain commonsense.

**C**OAL AGE has been from its beginning, and will continue to be, the leader in all the engineering and technical features of coal production. With the ever mounting cost of production comes a greater need of sound, efficient engineering and mine management. Coal Age has always stood foremost as a medium of exchange of advanced technical and scientific thought in the industry.

Coal producers are facing today, with executives in other industries, a new kind of labor problem. The engineers and managers

who stand between capital and labor, and friends of both, are the men on whom will largely fall the task of solving this labor problem. Coal Age will maintain its position of authority on this question.

**B**UT in addition to the technical and labor problems of efficient, low-cost and safe production of coal are the problems of profitable production, of transportation, of distribution, and of merchandising. Coal Age is broadening out to meet these new needs, just as in the past it has met the engineering problems of the producer.

Coal Age will make its pages a forum for the discussion and the interpretation of the practical ways to meet these new economic problems of the industry. Just as we have, as a result of the war, replaced the map of the United States with the map of the world, so as coal operators, we have learned to think in terms first of national, then of world fuel problems. The hard knocks of the past year or so have brought us together in a community of interest, at times with our backs to the wall, in an attitude that augurs well for the future exercise and further progress of the industry.

**C**OAL AGE proposes to bring to the men of the industry the news of the industry, interpreted as to its effect on their business. It proposes to bring to them the views of other operators, those whose experience and judgment command respect.

Coal Age believes in the opportunities of the coal industry. It is broadening its field in the same spirit that has built it in the past. With the growing problems of transportation, of

distribution, of markets, of prices, has come the need of sound and efficient marketing methods.

**T**HE coal question is national. It concerns every one. The problems are local, national, and world-wide. Coal Age approaches these problems in the spirit of service for each reader, whether he be miner, superintendent, engineer, operator, distributor, or banker.

Coal Age is associated with a group of technical magazines of other industries. It has opportunity through nation-wide organization to keep in touch with the industrial progress of the country, to pass the news on to its readers.

In common with the associated publications, it will serve under this banner: "Live for your industry, not on it."

## New Editorial Plans—and a New Man

By R. DAWSON HALL

**C**OAL AGE, to fill its mission, must consider the industrial problems as well as the technical, and it must work out its plan of campaign with the right sort of leadership. If this is to be so, a man must be sought who will adequately fill such a need as this. One does not have to look far. Conditions have marked out the man so unerringly that but one remains for choice.

When Edward W. Parker left the U. S. Geological Survey, leaving behind a marvellous record of the statistics of production, we all wondered who would be found to succeed him, for Parker had filled the place with distinction. He had been one of the Anthracite Coal Commission and had been influential in framing its valuable decisions, and he left to be Director of the Anthracite Bureau of Information.

**I**N his place came C. E. Leshner, then little known to any one but the Survey chiefs. A native of Colorado, he had attended the state's celebrated School of Mines and spent a few years professionally in British Columbia, Illinois and New York State. He then entered on the work of the Survey and was assigned to collaborate with the Coal Land Classification Board of which he later became chairman.

From this position he was called to fill the place vacated by Edward W. Parker, which gave him charge of the Coal Statistics in the Survey's Division of Mineral Resources. While there, the volumes of "Production" originated by Mr. Parker, not only continued to appear as well edited and reliable as before but supplemented by a smaller annual volume on "Distribution." Mr. Leshner was already broadening as far as the purse of the Geological Survey would allow him. He was



Harris & Ewing, Washington, D. C.  
C. E. LESHER

unconsciously laying the foundations for his great war work, and when the war arrived he had both the knowledge and the well-developed judgment that enabled him to be of service to his country.

**W**HEN the Council of National Defense was formed it was able from the first to plan intelligently its course in regard to coal, because it had Mr. Leshner on whom to rely as a guide in regard to the affairs of the coal industry. Before long Mr. Leshner became in effect the technical advisor of the Peabody Committee on Coal Production. During the strenuous days of that short-lived committee he found time also to take a leading part

in the formation of the National Coal Association.

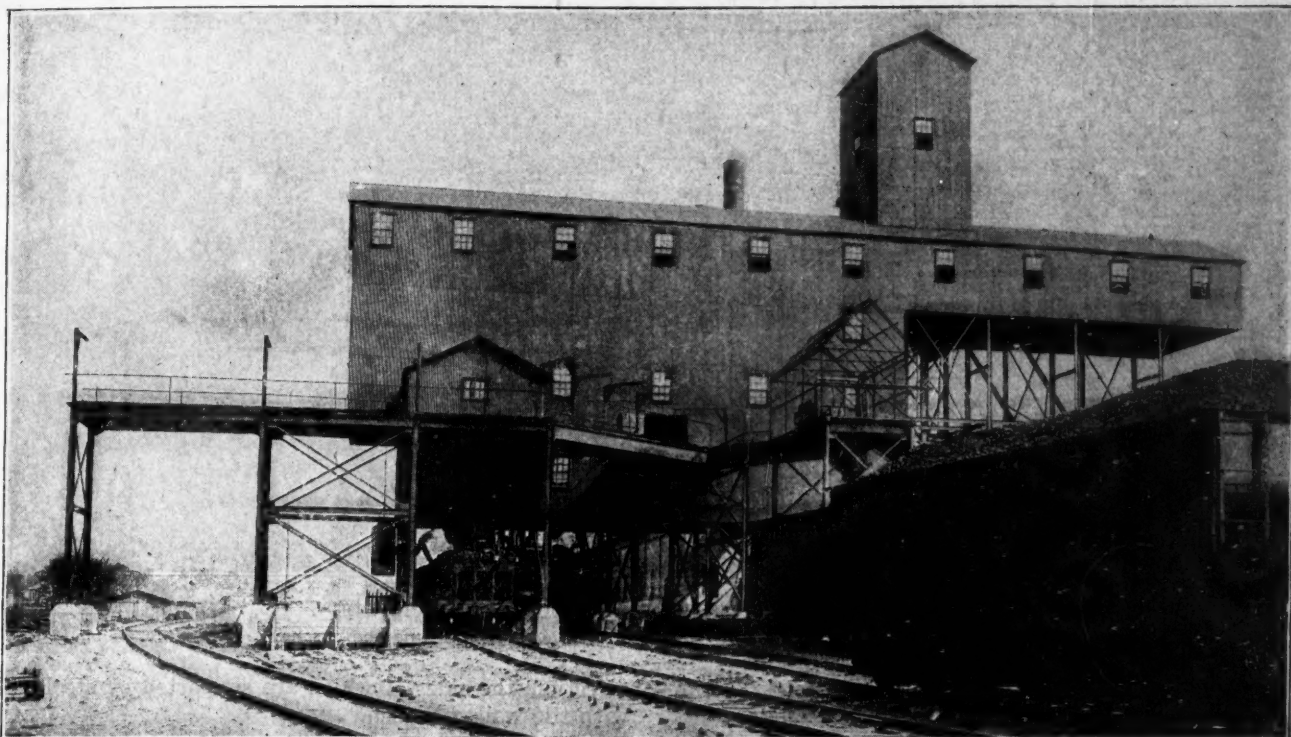
Mr. Leshner soon after became head of the apportionment division of the U. S. Fuel Administration, and there he directed expenditures which were made at the rate of \$400,000 annually and guided the work of 500 employees. It was then that the country first got reliable figures on coal consumption.

The statistics gathered by the Fuel Administration, in an effort to get the maximum benefit from every ton of coal consumed, were by far the most comprehensive statistical compilations of this character ever gathered in any country. The charts of weekly production, the weekly analyses of mine idleness from car shortage, strikes, mine disability and lack of orders are a monument to his industry and ability.

After the war, when he was about to be designated head of Mineral Resources branch, Mr. Leshner resigned his position with the U. S. Geological Survey that he might accept the Directorship of the National Coal Association's Bureau of Economics. In filling this important charge he prepared the statistical compilations which were presented by the National Coal Association to the President's Bituminous Coal Commission.

**N**EXT week Mr. Leshner will officially join our staff as co-editor with me of *Coal Age*. Our journal has set for itself even higher standards of accomplishment in the technical and engineering sides of coal production, over which I shall have jurisdiction, and the staff welcomes Mr. Leshner in the added field of development in the industrial and distribution phases of the paper that it will be his privilege to direct beginning with the issue of April 22.





## Working Both Freeport Beds Together

At This Operation the Upper and Lower Freeport Beds Are Separated by Six Inches of Boney—Both Beds Are Therefore Worked Simultaneously—Some of the Boney Is Burned for Fuel—A Record of the More Notable Mechanical Details of the Plant

BY DONALD J. BAKER  
Pittsburgh, Pa.

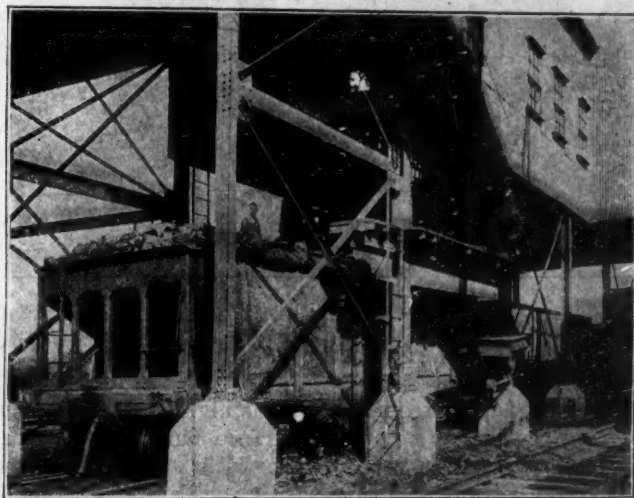
**M**INES in Allegheny County, Pennsylvania, are not confined entirely to the Pittsburgh coal bed, since there are several operations where the Upper and Lower Freeport beds are under development. One of the most up-to-date plants in the western end of the state is situated at Bairdford, on the Bessemer & Lake Erie R.R. out of East Pittsburgh. This operation is known as the Berry No. 3 mine of the Ford Collieries Co. It is here that the Upper and Lower Freeport beds of coal attain their greatest thickness and adaptability for mining.

The Ford Collieries Co., which is a subsidiary of the Michigan Alkali Co., was organized in 1909, at which time the coal properties now held were purchased. It was not until 1915, however, that the Berry No. 3 mine was opened and the surface buildings completed. The company has an unbroken tract of 8,000 acres of coal in this section of northern Allegheny County, all of which lies in a nearly rectangular tract. For the development of this coal acreage three shafts have been sunk on the property—the Benjamin No. 1, at Curtisville; the Francis No. 2, which is situated about a mile north of Curtisville, and the one already mentioned, which is located about 2½ miles west of Benjamin No. 1.

It is possible that a fourth shaft will be sunk to the north of Berry No. 3 at some time in the future, although this is still problematical and will not be done until the development work in the three mines already mentioned has reached a stage that will clarify the pos-

sible haulage problems to be encountered. The No. 1 and No. 2 mines were opened the same year that the company was organized.

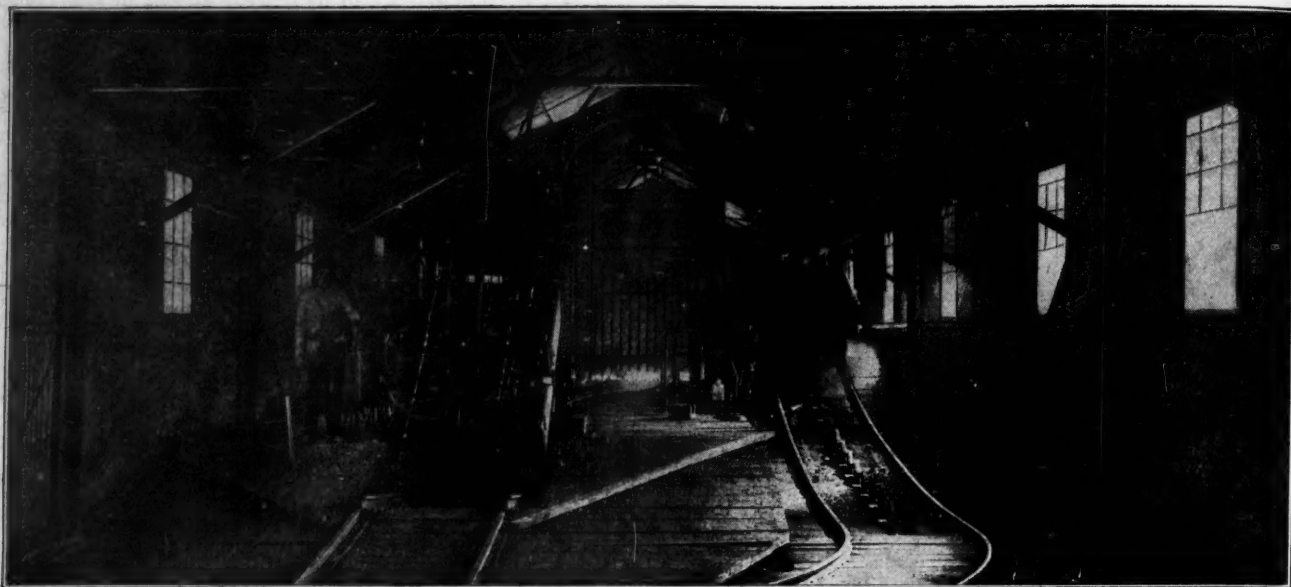
The Freeport beds of coal in this locality average a



LOADING COAL UNDER THE TIPPLE

The car is partly loaded with lump coal and the lead of a car retarder may be seen attached to this car.

little more than 6 ft. of workable thickness. The upper bed runs about 42 in. thick and the lower about 34 in. A 6-in. layer of boney separates the two beds, while



GENERAL VIEW ON THE DUMP FLOOR OF THE TIPPLE

The crossover dump, a portion of the tracks leading to and from the kick-back and the car haul are plainly visible.

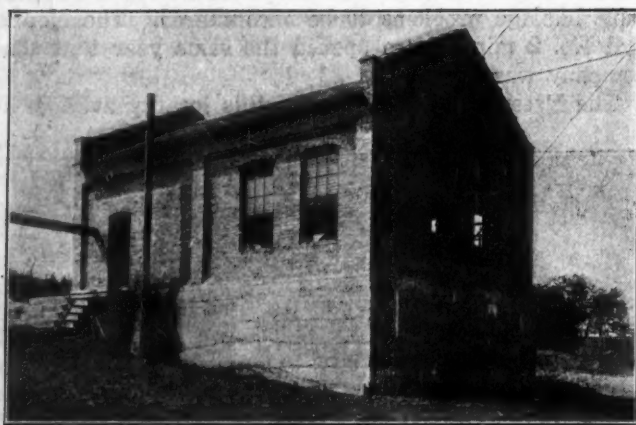
directly over the upper a bed of cannel coal is encountered that varies from 12 to 28 in. in thickness.

The two beds are worked as one. The boney does not mix readily with the coal when the two beds are shot down, and consequently it can readily be gobbed. All the boney has to be handled in gobbing and in that respect is a dead waste, but that disadvantage is offset by the fact that the roof is firm, the cannel forming the best kind of material to work under. No trouble is ever experienced with air-slacking or weathering—a condition that causes much trouble in the Pittsburgh bed, where a soft friable roof is encountered more often than a firm one.

The layout of the Berry No. 3 plant, which is the best

direction, the sides of which are supported by steel sets with tile walls between.

The cages in use were made at the machine shop of the No. 1 mine. In connection with the making of the cages it might be mentioned that the officials of the company are unusually resourceful men. Much of the apparatus and equipment that has been installed around the mine was made at the shops. In many cases manufactured apparatus has been so largely rebuilt in order to secure better service that the parent design is almost lost in the present one. Many ingenious safety devices have been constructed. W. D. Thomas, superintendent of the Berry No. 3 mine, who is a mechanic of no small ability, is credited with having built many of the devices. While much of this apparatus is not universally known, the company has obtained patents on most of it. This has been done merely as a protection from unscrupulous manufacturers. A separate article describing and illustrating some of the many devices that have been installed at these mines will be presented to *Coal Age* readers next week. Each can be made at the ordinary mine blacksmith or machine shop. In this article only passing mention will be made of this apparatus.



SIDE VIEW OF MAIN HOIST HOUSE

This building admirably illustrates the substantial brick and concrete construction employed in the surface buildings.

equipped of the three operations, is highly compact. The general construction of the surface buildings is of a substantial type as well as an artistic one. All of the buildings are of brick construction with concrete foundations. As can be noticed in Fig. 1, there are two shafts, one of which is utilized for hoisting the coal while the other serves as an airway and a material shaft. The main hoisting shaft is 210 ft. deep and is concrete lined. It is 29 ft. long by 10½ ft. wide in dimensions. At the bottom a concrete archway extends 7 ft. in each

#### CONCRETE LINING PROVIDED IN BOTH SHAFTS

The air and material shaft is of the same depth as the hoisting shaft and is concrete-walled to the bottom, excepting in a few places where solid rock was encountered in the sinking. It is divided into three compartments, one of which serves as an airway, another as a hoist compartment, while the third is utilized for a stairway and contains a steel staircase.

The headframe is of steel and was erected by the Dravo-Doyle Construction Co., of Pittsburgh, which also supervised the sinking of the shafts. In the hoist compartment there is one cage which is counterbalanced by weights running on guides in the air compartment. One of the details in the construction of the headframe tending toward efficiency is the installation of an electric chain hoist permanently suspended. By this means all heavy supplies that are to be taken underground are handled in the easiest and most efficient manner.

The hoist serving the air and material shaft is located



in the power-plant building. This is divided by a brick partition so as to house the boilers in one room and the generating units and hoist engine in another. This engine is a steam-driven Vulcan machine with a single 6-ft. drum. It is of the balanced type and is equipped with a steam brake, a hand brake and a Nicholson engine stop.

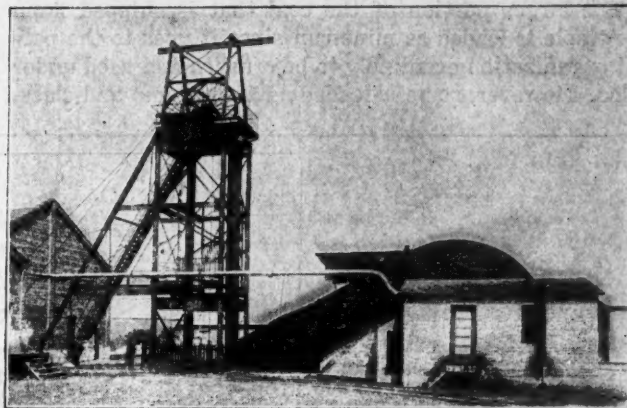
The balance of the engine room contains three direct-current generating units. Each is of General Electric make and of the same capacity, viz: 200 kw. A direct-current voltage of 250 is delivered for use within the mine and around the plant. Each generator is direct-connected to a Ball steam engine. In one section of the room a separate unit provides the current that is used for lighting the town. This is a General Electric machine of 50-kw. capacity. This generator delivers 2,200 volts alternating current. A four-panel switchboard completes the electrical installation at this point. Incidentally, the water-gage fan register has also been placed here.

The boiler room contains three batteries of horizontal tubular boilers set in pairs, each having a capacity of 200 hp. These are hand-fired. Coal is delivered from the tippie by a flight conveyor to overhead bunkers and thence fed to the floor through steel chutes. Mine water is used for boiler feed. It is pumped from the underground pumping station to a tank on one of the hillsides and flows from this point to the boiler room by gravity. A Cochrane heater has been installed for heating the feed water.

Between each pair of boilers a forced-draft fan driven by twin engines has been installed. The draft is automatically regulated and maintains the steam pressure at approximately 100 lb. to the square inch. The boney coal that finds its way to the surface is crushed at the tippie and mixed with about 25 per cent of clean slack, and this mixture is used under the boilers. Thus the fuel costs are kept down, as little marketable coal is burned. A concrete bin beneath the boiler room collects the ashes. They are then loaded into a trolley-type larry that passes through a concrete tunnel extending under the railroad tracks and dumped from a drift opening.

Another unit of the plant buildings is the main hoist-house. This contains a double 36 x 22 in., conical-drum, steam-driven Vulcan hoist engine. This machine is equipped with automatic safety devices and winds a 1½ in. steel cable. The tippie was designed and constructed by the Heyl & Patterson Co., of Pittsburgh. It is built with a steel framework covered with corrugated steel siding, and was designed to accommodate a daily output of 3,000 tons.

The mine cars, which are of 2-ton capacity are hoisted to the top of the tippie in plain cages built at the company shops. From this point they run by grav-

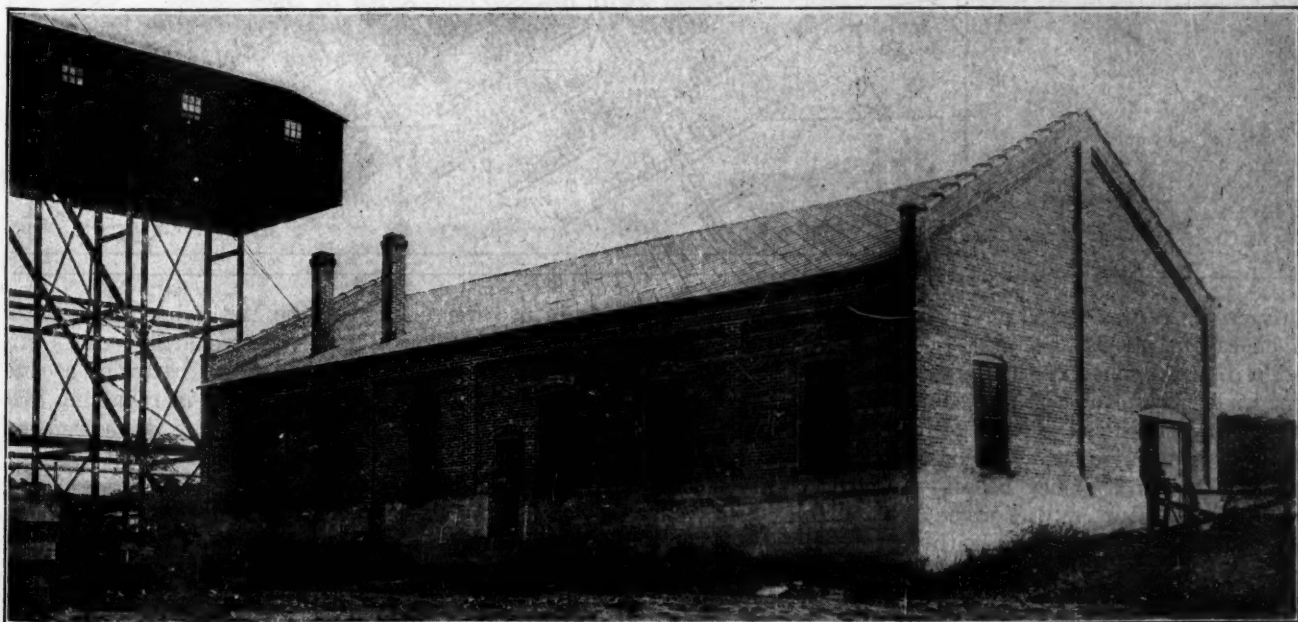


FANHOUSE AND MATERIAL HEADFRAME

One compartment of the air shaft is employed for lowering men and materials into the mine.

ity to a horn type of crossover dump. After discharge the car is held in place by the horns until the next loaded car to the rear depresses the dump "grass-hopper," forcing the horns away from the rails. The standing empty is thus released and passes on, after which the horns assume their normal vertical position. The car travels by gravity to a kick-back and is engaged by a chain haul, which raises it to a point higher than the cage landing. From that point it runs to a second kick-back and thence by gravity to the opposite side of the shaft, where it is lowered.

As the coal is dumped it passes over a dead plate, by



ONE BUILDING HOUSES BLACKSMITH, CARPENTER AND MACHINE SHOPS

This shop building, as may be noted, is in close proximity to the main shaft. This is advantageous from several points of view.

which it is spread for even distribution to the screen bars. When a car of boney coal is brought to the surface the dead plate is raised and the boney passes directly into a storage hopper. Some of this boney coal is sold when there is a demand for it. The greater portion, however, is loaded into electric larries and transferred to a nearby dump. A small amount of the boney is crushed and mixed with slack to enter a conveyor that leads to the overhead bunkers in the boiler room. When the boney storage hopper is empty steam coal may be dumped into it. The same larry is then utilized for collecting the coal and discharging it into wagons for domestic needs.

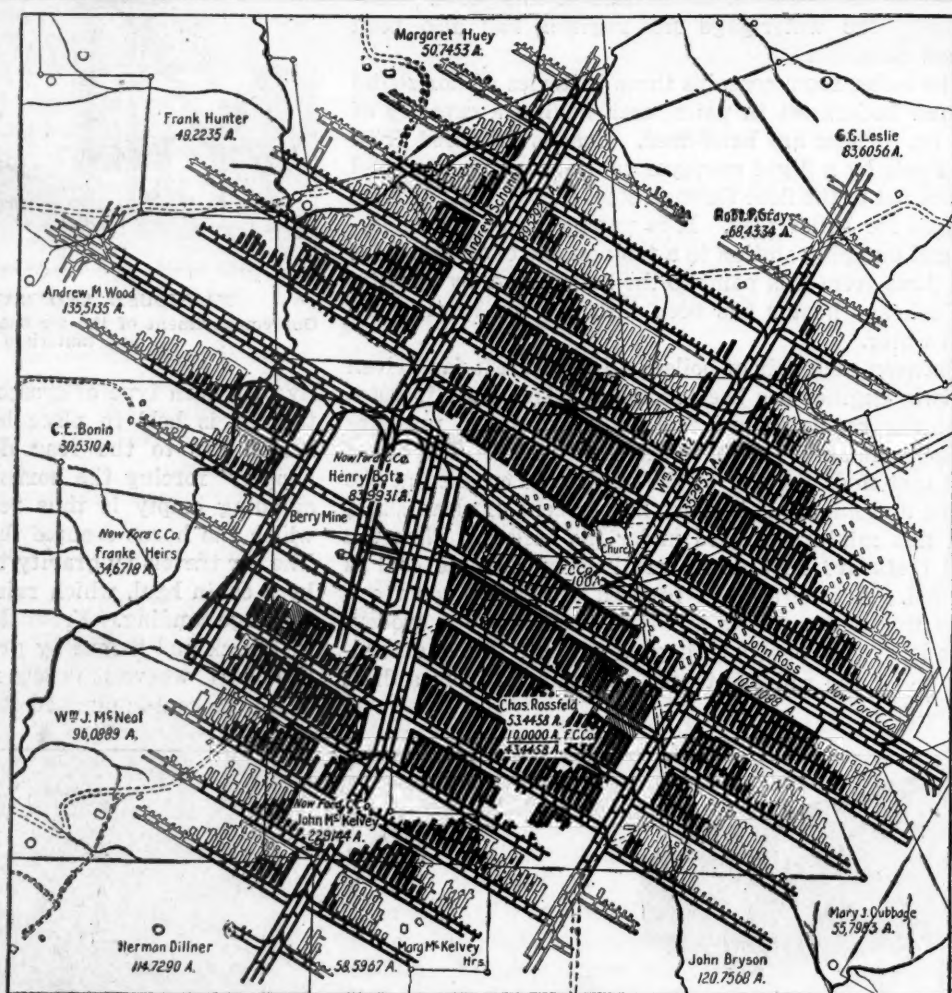
The larger portion of the coal that is shipped from the tippie is loaded as mine-run since it goes to the parent organization eventually to be crushed and used under kilns. However, some is loaded as 1½-in. lump and slack.

opposite side of the tippie from the power plant. The blacksmith shop, which is separated by a partition from the other two, contains forges and blowers. An electrically driven line shaft runs lengthwise through the building and operates various machines by belt connection. All of the saws and drills are made safe by wooden guards constructed around them. The Ford Collieries Co. is one of the leaders in the safe-practices movement, and the results accomplished are readily apparent to anyone who visits any of its mines. As has already been mentioned, the more important of the mechanical devices for eliminating danger will be taken up in a succeeding article.

The lamphouse is situated near the air and material shaft and is of the same characteristic construction as the other surface buildings. Little gas is encountered within the mine, yet electric cap lamps are employed.

### Map Showing Underground Workings

Projection is made on a modified triple entry system, with main headings driven four-entry; rooms are developed in panels. Thirty rooms are turned off each butt entry, these passages being driven 300 ft. apart.



This passes over a traveling picking table, where it is given careful preparation.

There is not much of the boney mixed with the clean coal underground despite the fact that a 1-in. layer of this material divides the two Freeport beds. The utmost vigilance is exercised over the loading at the face by men who are known as boney bosses—a term that is somewhat of a localism, by the way. Whether clean coal is being loaded can be gaged with fair accuracy by the thickness of the boney in any particular room and the consequent size of the gob pile.

One of the chief surface buildings is the blacksmith, carpenter and machine shop, which is situated on the

Those in use were made by the Witherbee Igniter Co. and are of two-volt capacity. The recharging racks are so constructed as to accommodate 370 batteries at one time. The charging room also is used in repairing and rebuilding the batteries. One of the advantageous features of the Witherbee type of lamp is that the batteries can be rebuilt at the mine.

A nominal fee of 4c. per day is charged against each miner for the use of a lamp. This is a lower rate than that charged by most companies in the Pittsburgh district. It is needless to say that this fee does not cover even the cost of maintenance.

A novel and effective method of handling the lamp



checks is employed. Seventeen wooden cleats have been nailed lengthwise on a board that measures 32 x 26 in. Horizontal slots are sawed in the cleats and each check is held to the board by placing it in the cleat slots. A board of this size will accommodate 800 checks. Each check slot is numbered and as the man returns his lamp, he is given the check as a receipt. All check numbers must be accounted for at the end of each day.

The fanhouse is located close to the air and material shaft and contains a 16 x 6-ft. reversible Jeffrey fan. This is connected by belt to a steam engine. A concrete tunnel leads from this building to the air and material shaft.

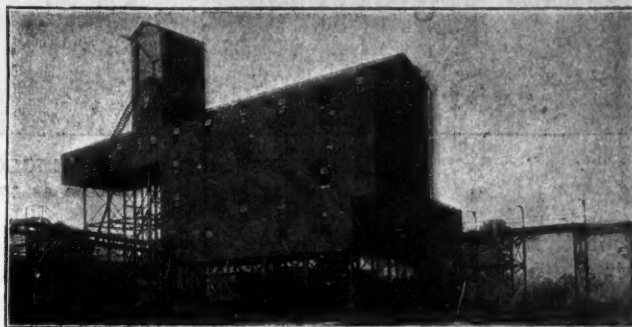
A bathhouse with accommodations for 100 men also has been installed. A janitor is in charge, and it is his duty to keep the place clean as well as to guard the clothes of the men. Equipment within this building comprises 24 lavatories, 4 showers, the necessary urinals, etc. Rectangular-shaped wire baskets, with hooks beneath, serve to hold the clothes of the men as well as individual towels and soap. The showers are separated by slate panels. Plumbing fixtures, which were supplied by the Speakman Mfg. Co., include shower heads of the cantonment type which are fitted with a ball-joint connection.

The remaining unit of the surface buildings is a combination first-aid dressing station, mine-foreman's office and supply house. There is nothing that deserves more than casual mention in this building and it consequently will be passed over lightly in lieu of the more interesting sections underground.

The layout around the shaft bottom is different from that usually found. A double track has been laid on either side of the shaft for a distance of 500 ft. One side handles the loaded cars and the other the empties. An automatic switch-throw, devised by Mr. Thomas,

allows the cars to be caged rapidly by a Bowerston caging apparatus. As trips of loaded cars are brought to the shaft bottom the locomotives cut off to a parallel entry and swing around to the empty storage yards, where a trip of empties is made up.

A rest room has been provided for the men at the bottom of the air and material shaft. Benches have been provided in this room for the waiting men. The caging arrangement is such as to give what might be called a turnstile effect, since only one man can enter the cage at a time. This arrangement eliminates crowd-



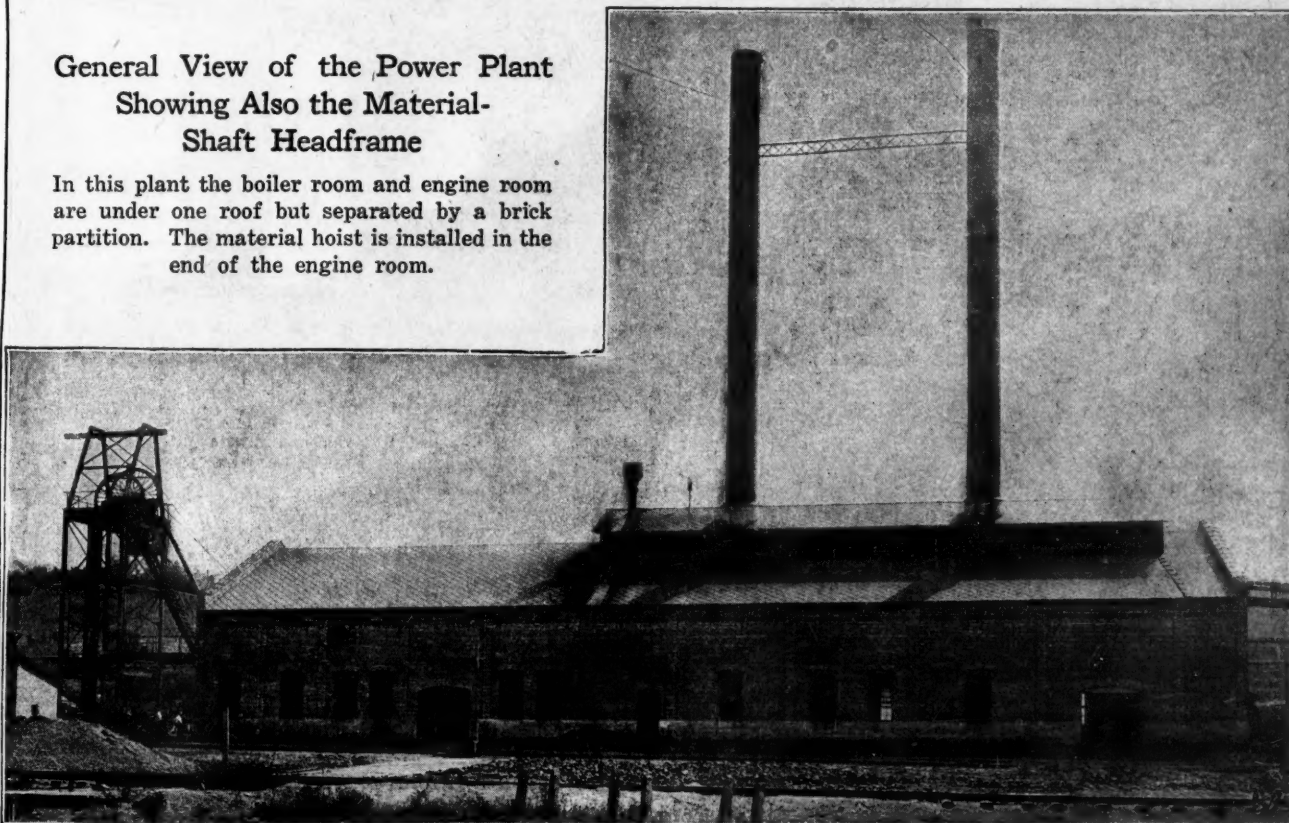
**TIPPLE SEEN FROM THE EMPTY CAR TRACKS**  
This is a view of the tippie from the opposite side to that shown in the frontispiece.

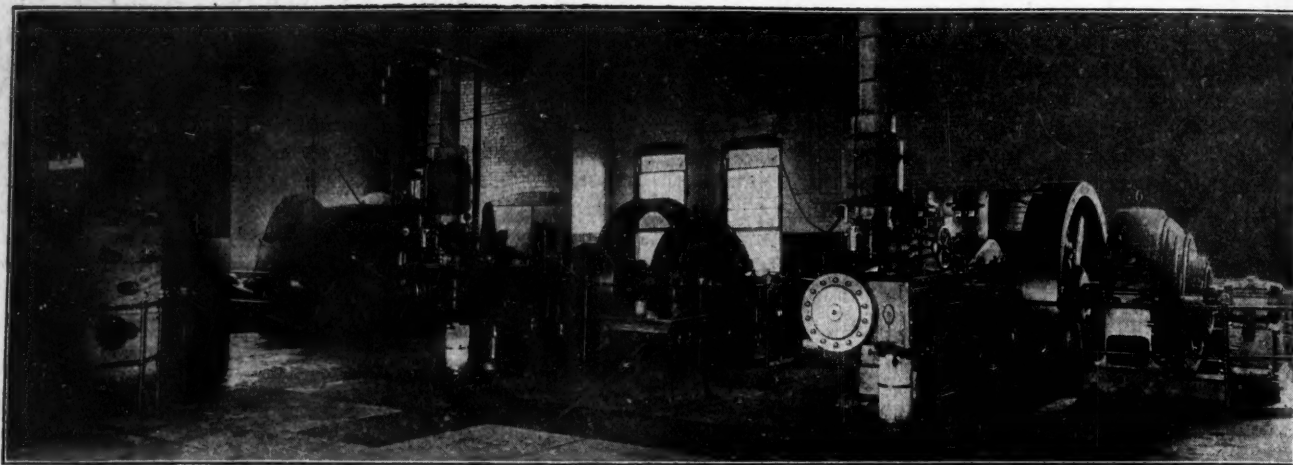
ing at the bottom at the end of the day and also assures each individual a trip up the shaft in the order in which he arrived at the bottom with respect to his fellow workers. Thus there is small chance for an accident to occur from crowding on the cage or around the landing.

Near the bottom of this shaft a hospital has been built. It is 30 x 20 ft. in dimensions and is electrically lighted and equipped with hot and cold water. A lavatory, benches and first-aid supplies are arranged con-

### General View of the Power Plant Showing Also the Material- Shaft Headframe

In this plant the boiler room and engine room are under one roof but separated by a brick partition. The material hoist is installed in the end of the engine room.





INTERIOR OF THE ENGINE AND GENERATOR ROOM

Two generating units may be seen as well as the material hoist in the background.

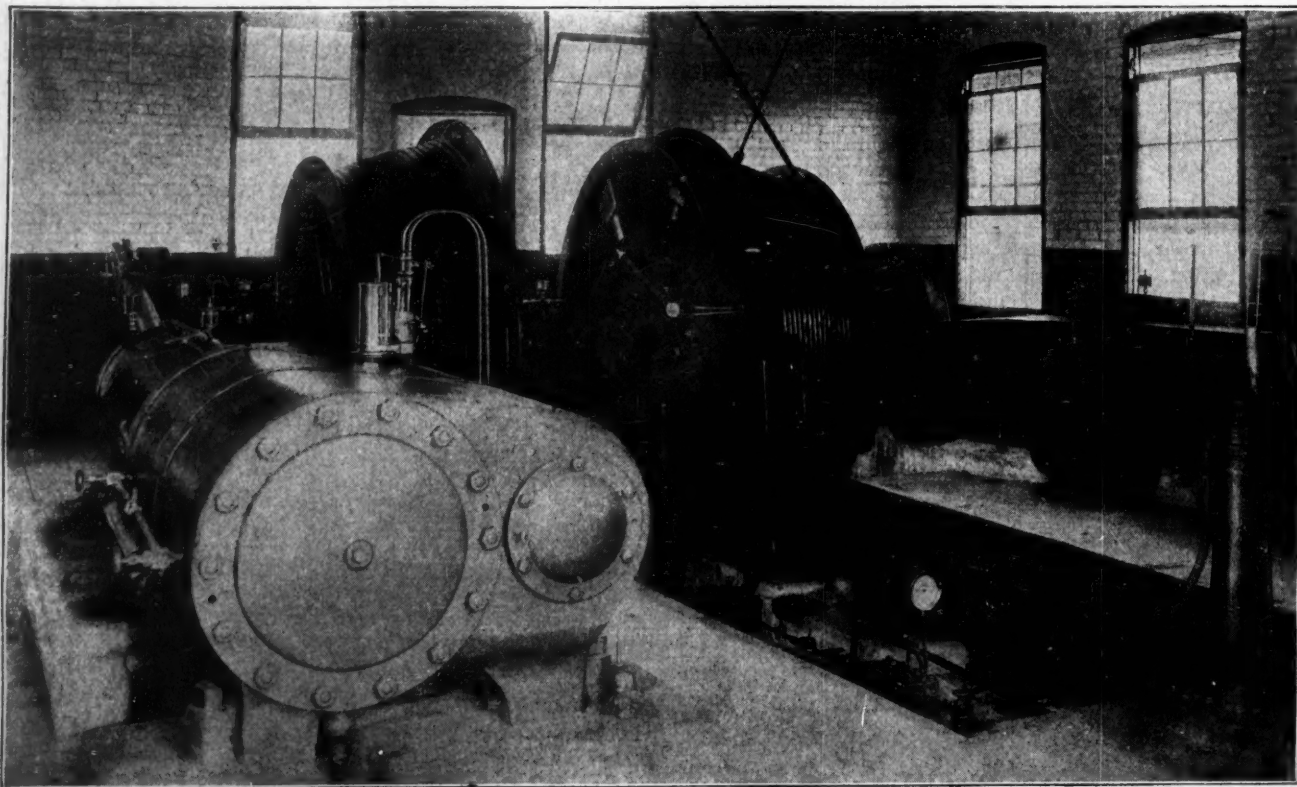
veniently. This is the only first-aid station within the mine. The common practice of locating such stations throughout the workings has been abandoned in favor of the plan of having one spacious room near the shaft bottom.

An electric locomotive ambulance, which was designed and constructed at the company shops, is kept in readiness at the motor barn for hurried calls. It is nothing more than a converted locomotive, but the idea is distinctively original and of this device more will be said in a subsequent article.

The main sump is located at the shaft bottom. A 14 x 10 x 18-in. single-plunger, horizontal, steam-driven Dean Bros. pump suffices to void the water to the surface through a 10-in. discharge line, although a 10 x 7 x 12-in. pump of the same type and make is used as a spare.

Each pump is equipped with an Ohio Grease Co. lubricator. Grease has been found more effective than oil in lubricating the cylinders. It has not been necessary to refill the lubricator oftener than once in 44 hours. Each lubricator will hold from one to two quarts of grease.

There is but one pumping station underground. However, portable field pumps are utilized in some sections where local dips are encountered. The pump room is 26 ft. long by 15 ft. wide and is constructed with tile siding. Six 10-in. I-beams support the roof. The steam used in driving the pump passes from the cylinder to condenser coils outside of the room, where it is utilized in drying sand for the locomotives. From the condenser coils the hot water passes to the hospital room and is again used, this time in heating the water that must be constantly available at this point. The sand is



INTERIOR VIEW OF THE MAIN HOIST HOUSE

The Vulcan hoist here installed, as may be seen, carries double conical drums. This form of drum possesses many advantages for heavy continuous hoisting over those of a cylindrical shape.



brought down the air and material shaft and is screened underground after having been dried.

The electric current that is used within the mine is brought down the air and material shaft by a 1,000,000-circ.mil cable. It is distributed to different sections of the operation from a switchboard located at the shaft bottom and containing four single-pole knife switches. A Streeter-Amet automatic scale recorder has been installed in a room near the hoisting shaft. It is of 5-ton capacity.

As can be noticed in the accompanying map of the underground layout, the coal is developed by a variation of the triple-entry system with a panel scheme applied to the rooms. The main shaft was located square with the railroad tracks beneath the tippie. The main entries were then driven square with the shaft. This has placed them at an angle of about 13 deg. from a north and south line. After the bottom layout had been established the main face entries were driven 30 deg. northeast and southwest. The butt entries were then driven perpendicular to these, which places them at an angle of 30 deg. northwest and southeast. The main haulage entries are quadruple.

The face entries are 1,800 ft. apart, which permits a development of 30 rooms off each butt entry. The butt entries are driven 300 ft. apart. All entries are 12 ft. wide and spaced on 50-ft. centers. The rooms are 25 ft. wide and likewise spaced on 50-ft. centers. Barrier pillars 100 ft. in thickness have been left to protect all of the main entries and bottom construction. Few of the pillars within the panels have been removed to date but this work will proceed wherever surface conditions will permit.

#### COAL UNDERCUT BY NINE SHORTWALL MACHINES

All of the mining machines and locomotives in use are of Goodman manufacture. There are two 13-ton series-parallel control locomotives for use on the main haulage-ways. Each is driven by a 278-hp. motor. Eight 6½-ton gathering locomotives of the low 30 type with parallel control are used in making up the trips in the face entries. The coal is undercut by nine 50-hp. shortwall mining machines, of which but seven are actually in use, the other two serving as spares. Where the rooms are driven with the dip, the cars are removed to the butt entry by the gathering locomotives, which are equipped with auxiliary crab reels and wire rope.

Sixty-pound rails are laid on the main haulage entries and 40-lb. steel in the face entries. The butt entries as well as the rooms have been laid with 20-lb. steel. Steel ties have been employed practically throughout the mine.

One of the most important features of the underground work is the common-sense application of safety principles, which has been given special attention. The Ford Collieries Co. has proved that efficient operation can go hand-in-hand with safe practices.

The main offices of the company are located at Curtisville. A. R. Pollock is general manager of mines; W. G. Shallcross, general superintendent; G. G. Long, chief engineer, and J. H. Byers, purchasing agent. W. D. Thomas is superintendent of the Berry No. 3 mine, as has already been mentioned, while Mr. Flenner is mine foreman. The hearty co-operation of these men has aided materially in the collection of data for this article, and *Coal Age* gratefully acknowledges the many courtesies extended by them.

The article that will follow this one, which will be descriptive of numerous safety devices, will also take up the first-aid and rescue program of this company. This important phase of mine operation is under the direction of M. S. Murray, safety engineer, who has also developed a first-aid program that is as effective as it is original. Steady production is possible only where the workmen are not subject to accident. This the Ford officials have long recognized. To be among the leaders in the safety movement requires persistent application of safety principles. Only where such persistent application is given to safety will results be obtained and the industry find that its safety labors yield the immunity from accident that is desired.

## Low-Temperature Carbonization Gives Huge Byproduct Yield

By Method Being Employed in Great Britain 640,000,000 Gallons of Fuel Oil Would Be Obtained from 50,000,000 Tons of Bituminous.

A SMOKELESS fuel known as coalite, which is claimed to be a natural briquet, generating as much heat per unit as coal, is being manufactured by a British company recently organized, Consul H. C. Claiborne, London, reports. The volatile constituents of the coal are collected by a process of low-temperature carbonization, recent experiments establishing the following products obtained at one time from one ton of bituminous coal:

Three gallons of motor spirit—nearly double the usual yield of motor spirit from processes where coal is distilled at a high temperature. This spirit is refined and is suitable for motor cars, aero engines, tractors and every purpose for which petrol (gasoline) or benzol is used today.

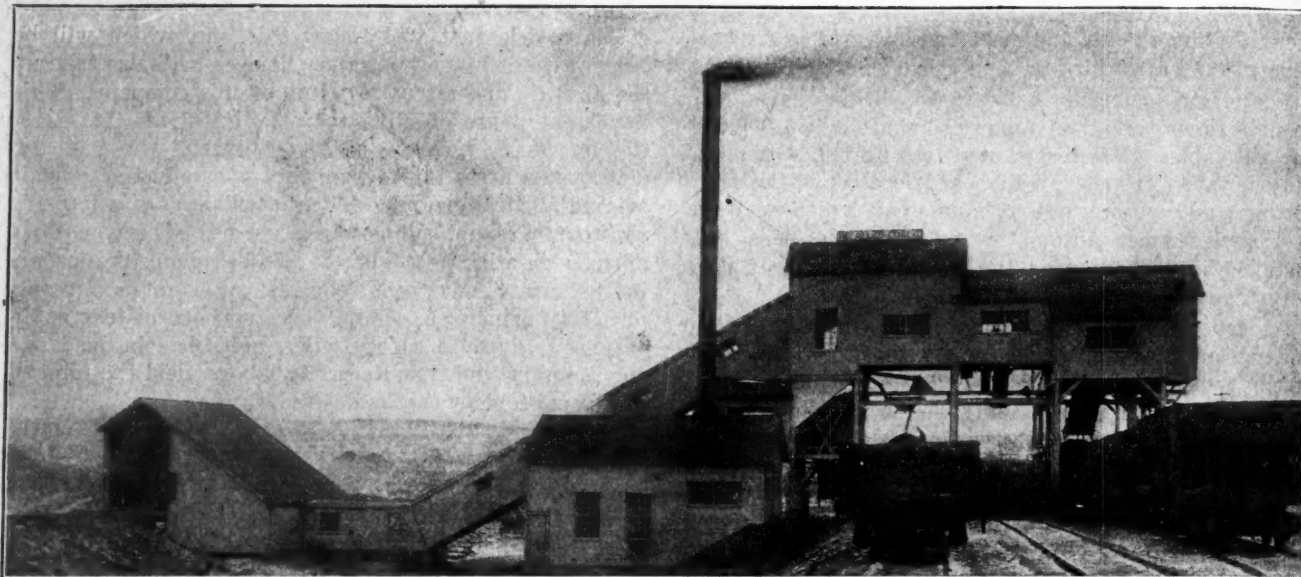
Sixteen gallons of oils for burning, lighting and lubricating. This oil is similar to crude petroleum. It can be burned without refining, direct under boilers for naval and maritime purposes generally. If distilled the products obtained are even more valuable and find a ready market for many purposes. The crude oil may be separated into motor spirit, cresylic oils, burning oils for lamps, lubricating oils, oils for Diesel engines, and pitch of superior quality for insulating and other purposes.

Seven thousand cubic feet of gas. This gas is of higher quality than that made by gas works and is of great value for lighting, heating and power purposes. Its heat value is 600 B.t.u. per cubic foot, after removal of the light oils, whereas that of ordinary coal gas, similarly treated, is about 500 B.t.u.

Twenty pounds of sulphate of ammonia, for fertilizers and high explosives.

Fourteen hundredweight of smokeless fuel.

The coal output of the United Kingdom in 1913 was estimated at 280,000,000 tons, valued at \$973,300,000. Between 40,000,000 and 50,000,000 tons are devoted to domestic consumption, and if this amount were converted into smokeless fuel by low-temperature carbonization some 640,000,000 gallons of fuel oil would be obtained annually. If this system were applied to all coal consumed in the United Kingdom the quantity of byproducts recorded would be enormous.



## A Coal Tipple for a Stripping Operation

This Tipple Is Extremely Simple Yet Any Size or Combination of Sizes Can Be Made by Merely Changing the Setting of Two or Three Gates—Provision Is Made for Future Crushing

BY FRANK J. SCHRAEDER, JR.  
Chicago, Ill.

**A** COAL tipple of marked simplicity in construction, equipment and flexibility in loading various sizes of coal and their combinations is that at the Allied Coal Co.'s stripping operation at Sonora, Muskingum County, Ohio. A description of this installation will undoubtedly be of interest to many operators since balanced horizontal picking-table screens are here used as well as a novel provision for future crushing facilities. The tipple is designed to handle 250 tons of coal per hour. It consists broadly of a housed receiving hopper of 35 ton capacity, a feeder, a steel apron-type elevating conveyor, a set of Jacobsen balanced horizontal picking-table screens combining coal-preparation and refuse-disposal facilities, a refuse storage, a lump loading boom and a compact power plant.

The coal is brought from the strip pit to the tipple in trains consisting of an 18-ton dinkey locomotive and Western side-dump cars of 4-cu.yd. capacity that discharge into the wooden steel-lined receiving hopper of 35 tons capacity. The receiving hopper is provided with a reciprocating feeder for uniformly feeding the coal onto the lower end of the steel apron conveyor, which extends into the waterproofed concrete pit supporting the receiving hopper. Power is imparted to the feeder by a chain drive from the conveyor foot shaft, while a clutch is provided for disengaging the feeder so as to permit operation of the conveyor independently of this device. Thus, most conveniently, the conveyor, at the close

Stripping coal is getting a bad name in the market because too many strippers believe that nothing more is necessary than to provide for uncovering, digging and loading the coal. Because the coal comes from an open cut is no reason why it should not be as carefully prepared as any other fuel and with as much care as is taken in this tipple.

of each day's work, may be left entirely free from coal. The apron conveyor elevates the coal for direct discharge to the tipple screens. It has a capacity of 250 tons per hour, is 36 in. wide and approximately 105 ft. long and is belt-driven from the countershaft indicated in the accompanying line drawing. The discharge end of the conveyor delivers the coal at a uniform rate over a chute directly to the horizontal shaker screens.

The Jacobsen balanced horizontal picking-table screen as here installed consists of a pair of horizontally reciprocating troughs, an upper screen section and a lower steel

trough section. The screen and the trough section have relatively reverse conveying motions, and as they are mounted on floating-type rollers, there is no vertical motion in the movement of the screen, so that coal can be readily hand-picked directly on the screening surface. The two screens, or troughs, are so arranged that the vibratory effect of one is balanced by the counter effect of the other.

The operating mechanism for driving the reciprocating screens is shown in one of the illustrations. Two pairs of oppositely mounted ordinary eccentrics are driven from a shaft, each pair operating one of the screens. A uniformly rotating, power-driven, differential fly-wheel pulley is so arranged as to impart to the shaft a motion that is slow at first, gradually accelerating toward the end of the stroke, then quickly reversing and slowing down toward the end of the return stroke.



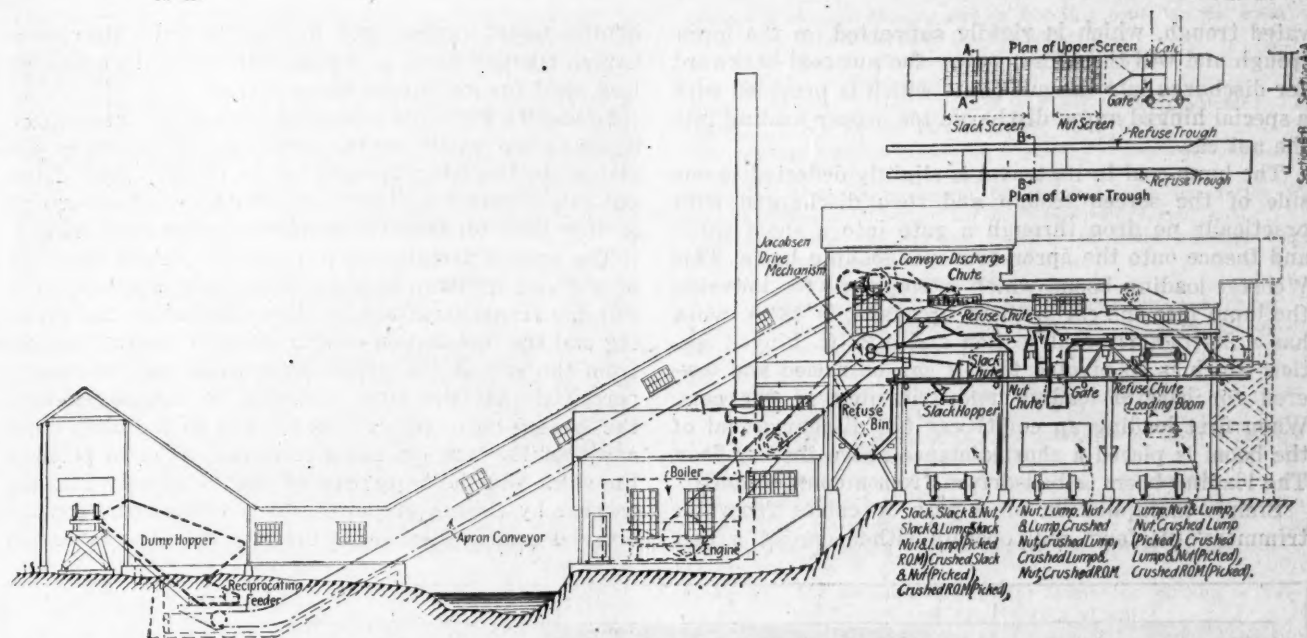


FIG. 1. CROSS-SECTION OF PREPARATION PLANT

Side-dump cars deliver the coal to a hopper from which it is fed to a conveyor that delivers it to the screening plant. Almost any combination of sizes can be delivered to almost any track under the tipple.

All parts of the machine are carefully designed and constructed. The eccentric straps and all the important elements are castings of steel. Bronze bushings are used in the bearings. The whole driving mechanism is mounted on a cast-iron base, and the equipment is all placed on one floor. This not only makes possible a more simple and less expensive tipple structure but also affords greater accessibility.

The upper screen is 5 ft. wide and approximately 45 ft. long. It is arranged to receive the coal directly from the conveyor chute, under which it extends and reciprocates. For removing the slack the coal is first passed over 12 ft. of  $\frac{3}{8}$  x  $\frac{1}{2}$  in. lip screen. Part of the slack coal is caught on the short horizontal deck under

this screen and conveyed forward to the slack chute, which is flared at the top to receive the remainder of the slack. This delivers the fine material to the center compartment of the lower trough, which, as above stated, has a reverse conveying action and will therefore carry its contents a short distance back for discharge into the slack hopper. A standard rack-and-pinion gate controls the discharge of the slack from the hopper into the slack car.

The lump-and-nut coal, which has been relieved of the slack, can now be picked as it passes over the blank plate and then over the 6 ft. of  $1\frac{1}{2}$  x  $1\frac{1}{2}$  in. lip screen for removing the nut. The nut coal is received on the lower deck, and is lowered through a gate onto an ele-



FIG. 2. TWO SHOVELS AT WORK IN THE STRIP PIT

This stripping is not particularly different from others except that Western side-dump cars are employed for removing the coal. Both shovels are full-revolving and the smaller is mounted on caterpillar trucks.

vated trough, which is rigidly supported on the lower trough and will therefore convey the nut coal backward for discharge into the nut chute which is provided with a special hinged apron discharge for proper loading into the nut car.

The lump coal in its travel is slightly deflected to one side of the screen trough and then discharged with practically no drop through a gate into a short chute and thence onto the apron-conveyor loading boom. This Webster loading boom, which is employed for lowering the lump into the car without breakage, is 48 in. wide, has a 20-ft. horizontal section and a 24-ft. hinged section which is so pivoted that it can be raised and lowered for careful loading and trimming of the cars. When first loading an empty car the discharge end of the boom is placed a short distance above the car floor. The loading boom is belt-driven from a countershaft.

Simple manipulation of a pair of cables from the trimmers' platform will operate either one of a pair

of the upper screen and discharged into the lower trough compartment, in which both sizes are conveyed backward for loading on the nut track.

In loading picked run-of-mine the nut and lump after being picked on the screen are by-passed as above explained to the lower trough. It is obvious that if the nut gate is closed the lump and nut coal will be conveyed farther back for direct discharge into the slack hopper.

The present installation provides for future crushing of the nut or lump coal by the simple addition of a suitable frame structure as shown dotted on the drawing and the installation of a crusher to receive the coal from the end of the upper screen. It may be readily perceived that the lump coal can be discharged onto the loading boom for careful loading on the lump track and that the nut, or, in other words, all sizes between the slack and the lump, can be passed directly into the crusher by closing proper gates. In this operation the crushed coal is discharged directly onto the extension

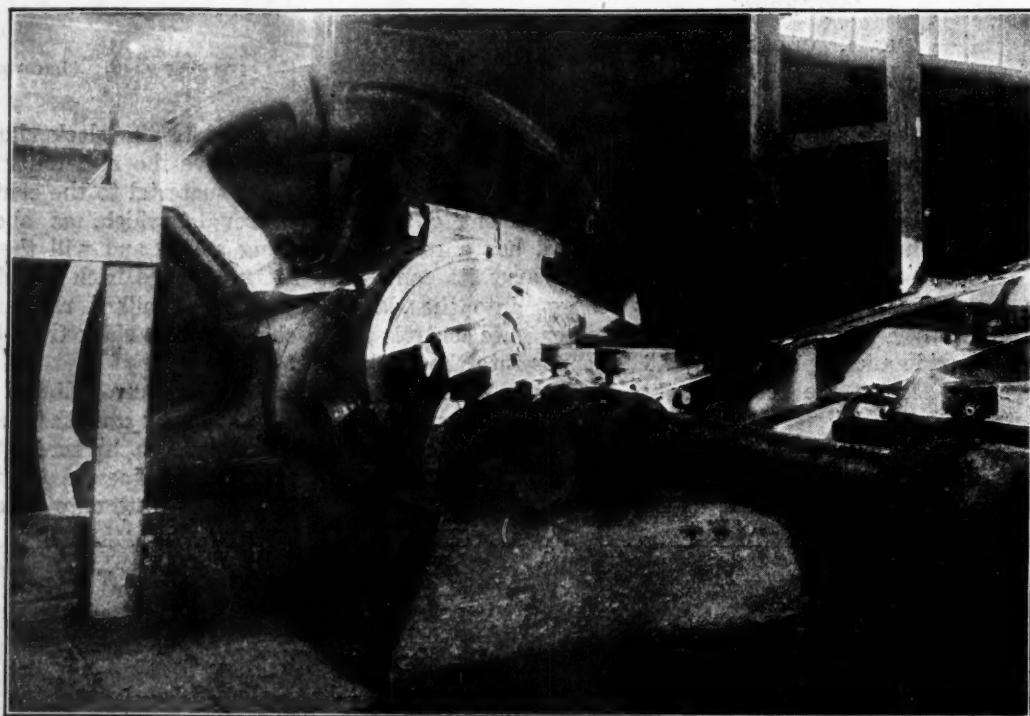


FIG. 3

### Mechanism Driving the Shaking Screens

A uniformly rotating, differential, flywheel pulley drives the eccentric shaft at a now-uniform speed of rotation. The screens are thus given unequal or conveying oscillations.

of clutches that control the operation of the small hoisting drum, which is connected to the boom drive and arranged to raise and lower the hinged section as desired or to stop or start the conveyor.

If it should be desired to mix the nut with the slack, it is only necessary to open a gate in the upper section of the shaker. This will discharge the coal directly into the center compartment of the lower trough. With the gate in this section closed, the nut coal will be conveyed back toward the slack hopper, where, preceding its discharge thereto, it is mixed with the slack coming from the upper screen through the slack chute.

Lump and nut can be loaded over the loading boom by the proper manipulation of the gates controlling the movements of these sizes. This will permit the discharge of the lump and nut over the chute to the loading boom. If it is desired to load the lump and nut on the nut track a different setting of the gates can be made so that both sizes will be conveyed toward the end

of the lower trough and is conveyed backward for loading either on the nut track or for mixing with the slack and loading on the slack track as picked, crushed run-of-mine.

In crushing, the closure of the proper gates permits the lump to pass directly into the crushed and over the lower trough for loading on either the nut track or for mixing with the slack. The nut coal in this case is discharged onto the loading boom for loading on the lump track. The entire equipment is so flexible that a simple manipulation of gates will readily afford the loading of the various sizes and their combinations as indicated in the drawing.

The conveying action of the coal over the upper screen is such that the refuse can be conveniently removed by hand. The pickings are dropped into chutes which feed into the two narrow refuse troughs formed integrally with the lower coal trough and of course have the same backward conveying action. This causes the



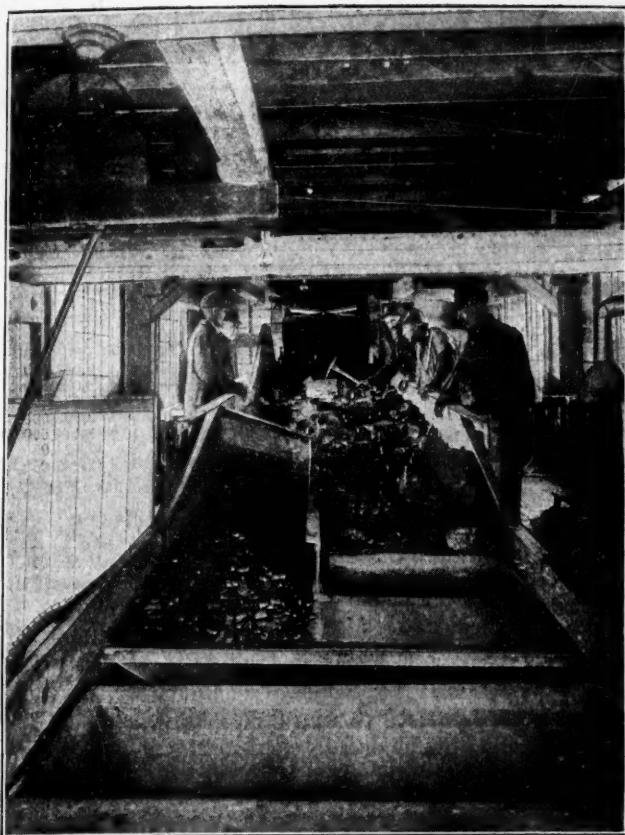


FIG. 4. SCENE IN THE PICKING ROOM  
The pickers are seen at work on the upper deck of the horizontal conveying screen. The lump coal is pushed to one side of the shaker before delivery.

refuse to discharge into the refuse storage bin, whence it can be conveniently removed at desired intervals.

This horizontal screen gives better preparation and more thorough screening than is possible with similar devices of the inclined type. The sizes are delivered from the screen to the cars with less degradation than with an inclined screen, because the distance traversed is shorter.

The entire tipple and power plant is of frame construction built on concrete foundations. The power plant consists of one 150-hp. 72 in. x 16 ft. Erie City high-pressure stationary boiler, and 16 x 18 in. "Vim" heavy-duty, center-crank, automatic engine rated at 125 hp., manufactured by the Ames Iron Works.

This article would not be complete if it did not make reference to the group of men whose vision and effort have made possible the complete development of this project. These include Edward A. Langenbach, president and general manager; A. J. Tice, vice-president and director of sales; A. A. Serva, assistant general manager, secretary and treasurer, and C. H. Flynn, general superintendent. The entire plant was designed and built by Jacobsen & Schraeder, Inc., engineers and constructors, Majestic Building, Chicago, Ill.

## Need For Study

BY J. T. BEARD

The answers given below were selected from replies made to various questions which were asked at recent mine foremen's examinations. The examiners did not penalize for either poor spelling or bad grammar. How would *Coal Age* readers grade these answers?

Ques.—What are the dangers of blasting coal "on the solid"?

- Ans.—(1) It is liable to fly back and hit you.  
(2) Danger of atermaten into loss of lives.  
(3) It is tight shots.

Ques.—In what velocity of air is a safety lamp unsafe?

Ans.—It would not be safe in 20,000 cu.ft. of air.

Ques.—How would you handle a safety lamp when found full of flame?

Ans.—A safety lamp should be removed with precaution to where they was a curant of air consealed under your coat.

Ques.—Describe the various systems of mine haulage with which you are familiar.

- Ans.—(1) Split and continnerus.  
(2) Sum has muls: sum has motors: sum has dinkes.

Ques.—In opening a new mine what are the principal questions to be considered?

- Ans.—(1) Ventlashun.  
(2) That depen on the loking of the seam the most serious question is shipping point.  
(3) In the opening of new mines is to open it at the least expense posibell.

Ques.—Which are preferable overcasts or undercasts?

Ans.—A overcast is bettir than a undercast for the reason the air will go up better than down.

Ques.—Which should be the larger, the upcast or the down-cast shaft?

- Ans.—(1) The upcast should be the largest on account of hav-ing largest area for returnig of air.  
(2) The upcast should be the larger because the air go-ing up should have more room will pull better.

Ques.—How would you ascertain the quantity of air passing through an airway?

Ans.—If there is a small quantity of air it will move very slow if at all wher there is a larg quantity it circulates fast.

Ques.—How may each of the mine gases be detected, etc.?

- Ans.—(1) By a flame cap, brilliancy of light, sweet taste and pains in the back, headache and by suffocation.  
(2) Carbon Dioxide is detected by putting the light out. If mixed with 7 times as much air will cause explosion.  
(3) Carbon dioxide is on the bottom and is brathed slowly untill an offell acking of head and back and limbs and will kill if not removed.  
(4) Marsh gas at a certain % will explode and will kill or else burn him up.  
(5) Marsh gas is lter than air in large quanites may cause sleepns and probley death. White damp is the oction taken from carbon and it will cause sleepness and dizyness. Marsh gas will be detect by head-ache. Several mine gases may be detected by head-ache are by getting your breath hard are by getting weak in your joints.

Ques.—Describe the anemometer and explain its use.

- Ans.—(1) A anmometer is a vary fine piece of machinery that a safe current of air will cause it to oprate.  
(2) Is a small thing round in the shape of a dollar clock and each revelation of this long hand registers one hundred feet of air.  
(3) Is an ensterman in the shape of a wach case with hands to shoe the pressher of the air.

Ques.—What is the difference between a true fault and a fault of erosion?

- Ans.—(1) A fault of erosion come unexpected and a true fault is where the coal plays out.  
(2) A fault of erosion is where the coal stoped or was no more.

Ques.—What does the law require relative to the handling of powder and the charging and firing of shots?

Ans.—Handlig of powder sould bee handlid with care and charign and faring of shots a miner should his beat gugement charigen and faring of shots.

It is not unusual to find answers such as these in the papers submitted by candidates in examination. The fact is evidence of the ever present necessity of mining companies organizing and maintaining educational classes for giving instruction in English, spelling, arithmetic and the rudimentary principles of coal mining.

Instruction should be free to ambitious workers, on recommendation of the foreman. The results will show on the cost-sheets of the mine if the instructors and their methods are of the right kind. Superintendents should take notice.

# Official Report of Coke Industry in 1919

**Production Decreased but Capacity of Byproduct Ovens Increased—Number of Ovens Under Construction Falls from 1,815 in Beginning of 1919 to 853 in Beginning of Present Year—11,232 Ovens Are Now Built and Building**

**O**UTSTANDING features of the coke industry during the year 1919 were the great slump in demand that followed the armistice and a remarkable increase in the proportion of byproduct coke made as compared with beehive coke. According to preliminary estimates made by F. G. Tryon, of the U. S. Geological Survey, the total production of coke in 1919, including beehive and byproduct but excluding gas-house coke, was 44,821,000 net tons, a decrease, as compared with 1918, of 11,657,000 tons, or 20.6 per cent.

The decrease was confined almost entirely to beehive coke, the production of which fell off 36 per cent. The output of byproduct coke decreased only 3.2 per cent. The output of byproduct coke consequently exceeded that of beehive coke for the first time. In 1918 about 46 per cent of the total coke made in the United States was produced in byproduct ovens and 54 per cent in beehive ovens. In 1919 the proportions were reversed, 56 per cent coming from byproduct and only 44 per cent from beehive ovens. The year 1919 thus marked a turning point in the history of coke manufacture in the United States.

## COKE MANUFACTURED AT GAS PLANTS

The quantity of coke manufactured in 1919 at illuminating-gas plants, not included in the figures given above, was about 3,200,000 tons. The total quantity of coke produced in 1919 was therefore about 48,000,000 tons. The figures for beehive coke are estimated from shipments by rail. Those for byproduct coke are based on reports collected from producers in a preliminary canvass. The figures for both are subject to revision and will be revised when the annual statistical canvass is completed.

The blast furnaces are the great customers of the coke industry. In 1918, according to the statistical report of the American Iron and Steel Institute for 1918, they consumed 45,704,000 net tons of coke, or 81 per cent of the total output of beehive and byproduct coke combined. In 1919 the production of pig iron fell off 22 per cent and the demand for coke declined in proportion. The reaction was especially felt by the producers of beehive coke. With the growth in the output of byproduct ovens, the beehive coke industry is likely to become more and more an auxiliary source of supply, carrying the peak load in times of extreme activity and correspondingly restricted in times of depression. This fact makes the current output of beehive coke a highly sensitive business barometer.

## BEEHIVE COKE OUTPUT FOLLOWS PIG IRON SUPPLY

Table I shows in parallel columns the monthly output of pig iron and of beehive coke in 1919. The post-war slump in the demand for both began to be seriously felt about March 15. The low point for the year was reached in May. Thereafter production slowly recovered, only to be further interrupted by the steel workers' strike, which began Sept. 22, and the coal strike of Nov. 1 to Dec. 10.

TABLE I. ESTIMATED MONTHLY PRODUCTION OF BEEHIVE COKE AND OF PIG IRON IN THE UNITED STATES IN 1919

| Month                      | Beehive Coke<br>(Net Tons) | Pig Iron (a)<br>(Gross Tons) |
|----------------------------|----------------------------|------------------------------|
| Monthly average, 1918..... | 2,540,000                  | 3,255,000                    |
| January.....               | 2,384,000                  | 3,306,000                    |
| February.....              | 1,787,000                  | 2,948,000                    |
| March.....                 | 2,091,000                  | 3,088,000                    |
| April.....                 | 1,343,000                  | 2,474,000                    |
| May.....                   | 1,103,000                  | 2,108,000                    |
| June.....                  | 1,148,000                  | 2,114,000                    |
| July.....                  | 1,482,000                  | 2,424,000                    |
| August.....                | 1,699,000                  | 2,742,000                    |
| September.....             | 1,755,000                  | 2,481,000                    |
| October.....               | 1,521,000                  | 1,864,000                    |
| November.....              | 1,647,000                  | 2,407,000                    |
| December.....              | 1,690,000                  | 2,630,000                    |
| Totals.....                | 19,650,000                 | 30,586,000                   |

(a) Figures for 1918 quoted from American Iron Steel Institute; those for 1919 from *Iron Trade Review*.

As a result the production of beehive coke fell off 10,831,000 tons, or 36 per cent, from 1918 to 1919. The total output in 1919 is estimated at 19,650,000 net tons (Table II). All districts shared in the decrease. The production in Pennsylvania and Ohio is placed at 14,861,000 tons, as compared with 22,276,000 tons the year before.

TABLE II. ESTIMATED PRODUCTION OF BEEHIVE COKE, BY GROUPS OF STATES, IN 1919, WITH COMPARATIVE FIGURES FOR 1918 IN NET TONS

|   | 1918 <sup>a</sup> | 1919 <sup>b</sup> | Decline<br>Per Cent |
|---|-------------------|-------------------|---------------------|
| Pennsylvania and Ohio.....              | 22,276,000        | 14,861,000        | 33.29               |
| West Virginia.....                      | 2,717,000         | 1,061,000         | 60.95               |
| Alabama, Tennessee, and Georgia.....    | 2,042,000         | 1,695,000         | 17.00               |
| Virginia and Kentucky.....              | 1,535,000         | 1,201,000         | 21.76               |
| Colorado, Oklahoma, and New Mexico..... | 1,401,000         | 558,000           | 60.17               |
| Washington and Utah.....                | 510,000           | 274,000           | 46.28               |
| United States.....                      | 30,481,000        | 19,650,000        | 35.54               |

(a) Final figures. (b) Estimates.

## BYPRODUCT COKE

The total output of coke produced in byproduct ovens in 1919 was 25,171,000 net tons, a decrease, as compared with 1918, of 827,000 tons, or 3.2 per cent. The effect of the decline in demand for byproduct coke upon production was largely counteracted by the completion of new plants. The rate of production was higher during January, February and March than during the remainder of the year.

TABLE III. RATE OF PRODUCTION OF BYPRODUCT COKE PER 30-DAY MONTH IN 1919

|                          | Net Tons  |
|--------------------------|-----------|
| First quarter.....       | 2,260,000 |
| Last three-quarters..... | 2,043,000 |
| Year.....                | 2,098,000 |

The dull season in the steel industry was most pronounced from April to July. During the last quarter of the year the byproduct coke industry suffered from the combined effects of the steel strike, which restricted the demand, and of the coal strike, which curtailed the supply of coal.

The output by states is given in table V. The figures show a general decrease as compared with 1918, which affected all states except New Jersey, Ohio and Pennsylvania. The producers in Ohio reported an increase of 4 per cent. A larger increase (16 per cent.) was made in New Jersey, and the largest of all in Pennsylvania, where the completion of new ovens caused an increase of 25 per cent.



TABLE IV. BYPRODUCT OVENS UNDER CONSTRUCTION JAN. 1, 1920

| Operator                           | Location of Plant    | No. of Ovens | Type of Oven    | Probable Date of Operation |
|------------------------------------|----------------------|--------------|-----------------|----------------------------|
| Birmingham Coke & Byproducts Co.   | Birmingham, Ala.     | 50           | Koppers         | Mar. 1, 1920               |
| Sloss & Sheffield Steel & Iron Co. | Birmingham, Ala.     | 120          | Semet-Solvay    | May 1, 1920                |
| Tennessee Coal, Iron & R.R. Co.    | Fairfield, Ala.      | 77           | Koppers         | Feb. 1, 1920               |
| St. Louis Coke & Chemical Co.      | Granite City, Ill.   | 80           | Roberts         | June 1, 1920               |
| Donner-Union Coke Corporation      | South Buffalo, N. Y. | 150          | Koppers         | June 1, 1920               |
| Lackawanna Steel Co.               | Lackawanna, N. Y.    | 60           | Semet-Solvay    | July 1, 1920               |
| Cambria Steel Co.                  | Johnstown, Pa.       | 60           | Cambria-Belgian | June, 1920                 |
| Jones & Laughlin Steel Co.         | Pittsburgh, Pa.      | 60           | Koppers         | Apr. 1, 1920               |
| Pittsburgh Crucible Steel Co.      | Midland, Pa.         | 100          | Koppers         | June, 1920                 |
| Domestic Coke Corporation          | Fairmont, W. Va.     | 60           | Koppers         | May 1, 1920                |
| Steel & Tube Co. of America        | Mayville, Wis.       | 36           | United-Otto     | Jan. 1, 1920               |
| Total                              |                      | 853          |                 |                            |

In order of rank Pennsylvania came first, with 5,747,000 tons; Ohio second, with 5,445,000 tons; and Indiana third, with 3,691,000 tons. Pennsylvania has thus regained first place as a producer of byproduct coke, a position held by that state from 1915 to 1917 but lost to Ohio in 1918. Pennsylvania is now supreme in the coke industry. It is not only the largest producer of both beehive and byproduct coke, but it supplies much of the coal consumed by byproduct ovens in other States.

TABLE V. BYPRODUCT COKE PRODUCED IN 1918 AND 1919, BY STATES, WITH INCREASE OR DECREASE IN NET TONS

| State               | 1918      |                  | 1919      |                  | Increase (+) or Decrease (-) |          |
|---------------------|-----------|------------------|-----------|------------------|------------------------------|----------|
|                     | Ovens     | Tonnage Produced | Ovens     | Tonnage Produced | Tons                         | Per Cent |
| Alabama             | 847       | 2,634,451        | 906       | 2,255,000        | -380,000                     | -14      |
| Colorado            | 120       | (a)              | 120       | (a)              | (a)                          | (a)      |
| Illinois            | 626       | 2,285,610        | 714       | 1,705,000        | -581,000                     | -25      |
| Indiana             | 1,026     | 3,898,215        | 1,216     | 3,691,000        | -207,000                     | -5       |
| Kentucky            | 108       | 517,749          | 108       | 408,000          | -110,000                     | -21      |
| Maryland            | 180       | 474,368          | 360       | 356,000          | -118,000                     | -25      |
| Massachusetts       | 400       | 556,397          | 400       | 393,000          | -163,000                     | -29      |
| Michigan            | 269       | (a)              | 389       | (a)              | (a)                          | (a)      |
| Minnesota           | 220       | 784,065          | 220       | 586,000          | -198,000                     | -25      |
| Missouri            | 55        | (a)              | 56        | (a)              | (a)                          | (a)      |
| New Jersey          | 260       | 682,148          | 315       | 789,000          | +107,000                     | +16      |
| New York            | 615       | 1,069,587        | 591       | 751,000          | -319,000                     | -30      |
| Ohio                | 1,658     | 5,226,334        | 1,608     | 5,445,000        | +219,000                     | +4       |
| Pennsylvania        | 2,368     | 4,586,981        | 2,846     | 5,747,000        | +1,160,000                   | +25      |
| Rhode Island        | 24        | 124,469          | 24        | 105,000          | -20,000                      | -16      |
| Tennessee           | 20        | 30,129           | 20        | 28,000           | -2,000                       | -7       |
| Washington          | 214       | 603,393          | 214       | 393,000          | -210,000                     | -35      |
| West Virginia       | 268       | (a)              | 232       | (a)              | (a)                          | (a)      |
| Wisconsin           | (a)       | (a)              | (a)       | (a)              | (a)                          | (a)      |
| Combined States (b) | 2,523,684 |                  | 2,519,000 |                  | -5,000                       | -0.2     |
| Total               | 9,279     | 25,997,580       | 10,379    | 25,171,000       | -827,000                     | -3       |

(a) Included in combined states. (b) Includes Colorado, Michigan, Missouri, Rhode Island and Wisconsin, combined to avoid disclosing operations of individual companies.

## BYPRODUCT OVENS COMPLETED IN 1919

In 1919 a total of 1,228 new byproduct ovens were completed, of which 718 were new plants and 510 were extensions at existing plants. Pennsylvania put the largest number of new ovens in operation—478. Indiana came second, with 190, and Maryland third, with 180. One new state, Rhode Island, entered the ranks of byproduct coke producers in January, when the Providence Gas Co.'s plant was completed.

During the year 128 ovens were abandoned or were so rebuilt as to be classed as new ovens.

Table IV summarizes returns made to the United States Geological Survey from byproduct operators on

new ovens in construction at the beginning of 1920. In all 853 ovens are scheduled to come into operation by July 1, 1920. Of these ovens 247 are in Alabama, 220 in Pennsylvania, 210 in New York, and smaller numbers in Illinois, West Virginia and Wisconsin. They are distributed among 11 projects, 6 of them new plants and 5 of them additions to existing plants.

Summing up ovens under construction 497 are Koppers, 180 Semet-Solvay, 80 Roberts, 60 Cambria-Belgian and 36 United-Otto ovens.

The completion of these projects will mean an increase of 8 per cent in the total number of byproduct ovens in the country. Construction is more active now than in the years immediately before 1914, when the European war began, but is less active than it was during the war. Much of the construction now under way was projected before the armistice. The number of byproduct ovens under construction in recent years has been as follows:

TABLE VII. BYPRODUCT OVENS IN CONSTRUCTION, JAN. 1, 1914-1920

| JAN. 1, 1914-1920 |       |           |       |
|-------------------|-------|-----------|-------|
| 1914.....         | 504   | 1917..... | 2,084 |
| 1915.....         | 644   | 1918..... | 2,260 |
| 1916.....         | 1,191 | 1919..... | 1,815 |
| 1920.....         |       |           | 853   |

The following table shows the number of ovens of each type in existence on Jan. 1, 1920, the number on Jan. 1, 1919, and the number now under construction. Of the ovens put in operation in 1919, 860 were of the Koppers type; 240 were Semet-Solvay, and 128 were Wilputte.

TABLE VIII. OVENS IN USE AT BEGINNING AND END OF 1919, BY TYPE

| Type            | In Existence Jan. 1, 1919 | In Existence Jan. 1, 1920 | Building Jan. 1, 1920 |
|-----------------|---------------------------|---------------------------|-----------------------|
|                 |                           |                           |                       |
| Koppers         | 4,829                     | 5,659                     | 497                   |
| Semet-Solvay    | 2,035                     | 2,275                     | 180                   |
| United-Otto     | 1,840                     | 1,754                     | 36                    |
| Rothberg        | 281                       | 257                       | ...                   |
| Wilputte        | 78                        | 206                       | ...                   |
| Cambria-Belgian | 90                        | 90                        | 60                    |
| Gas machinery   | 60                        | 60                        | ...                   |
| Klonne          | 42                        | 42                        | ...                   |
| Roberts         | 24                        | 24                        | 80                    |
| Piron           | ...                       | 12                        | ...                   |
| Total           | 9,279                     | 10,379                    | 853                   |

The capacity of a coke oven naturally depends upon the number of hours adopted as standard coking time. The maximum capacity of the byproduct plants of the

TABLE VI. NEW BYPRODUCT OVENS COMPLETED AND PUT IN BLAST IN 1919

| Company                         | Location of Plant    | Number of Ovens | Type of Ovens | Date Blown In        |
|---------------------------------|----------------------|-----------------|---------------|----------------------|
| New plants:                     |                      |                 |               |                      |
| International Harvester Co.     | South Chicago, Ill.  | 88              | Wilputte      | Nov. 13, 1919        |
| Steel & Tube Co., of America    | Indiana Harbor, Ind. | 120             | Semet-Solvay  | Aug. 28, 1919        |
| Ford Motor Co.                  | Detroit, Mich.       | 120             | Semet-Solvay  | Oct. 14-Dec. 6, 1919 |
| Jones & Laughlin Steel Co.      | Pittsburgh, Pa.      | 240             | Koppers       | June 18, 1919        |
| Rainey-Wood Coke Co.            | Swedeland, Pa.       | 110             | Koppers       | Aug. 26, 1919        |
| Providence Gas Co.              | Providence, R. I.    | 40              | Koppers       | Jan. 28, 1919        |
| Additions to existing plants:   |                      |                 |               |                      |
| Tennessee Coal, Iron & R.R. Co. | Fairfield, Ala.      | 77              | Koppers       | Dec. 17, 1919        |
| Citizens Gas Co.                | Indianapolis, Ind.   | 40              | Wilputte      | Jan. 31, 1919        |
| Indiana Coke & Gas Co.          | Terra Haute, Ind.    | 30              | Koppers       | Jan. 1, 1919         |
| Bethlehem Steel Corp.           | Sparrows Point, Md.  | (a) 180         | Koppers       | Jan. 1, 1919         |
| Seaboard By-Product Coke Co.    | Kearny, N. J.        | 55              | Koppers       | Jan. 21, 1919        |
| Carnegie Steel Co.              | Clairton, Pa.        | 128             | Koppers       | June 3-July 1, 1919  |
| Total                           |                      | 1,228           |               |                      |

(a) Completed but not put in blast.

country, defined as "the maximum quantity of coke of the grade desired by the operator which can be produced when all conditions are favorable, with all ovens active," has been as follows:

TABLE IX. MAXIMUM CAPACITY OF BYPRODUCT COKE OVENS IN THE UNITED STATES, JAN. 1, 1918-1920, NET TONS PER ANNUM

|           |            |
|-----------|------------|
| 1918..... | 27,000,000 |
| 1919..... | 33,700,000 |
| 1920..... | 39,500,000 |

In the year 1918 there was thus an increase in the annual capacity of coke ovens amounting to 6,700,000 tons, or 25 per cent. The increase during the year 1919 was somewhat smaller—5,800,000 tons, or 17.2 per cent.

The annual capacity of the plants completed and in operation at the beginning of 1920, including ovens temporarily idle, was 39,500,000 net tons. This figure represents the output at full capacity—operation of 100 per cent. In actual practice an average operation above 90 per cent cannot be assumed for the country as a whole. Weekly reports received from the byproduct plants during the war show that from Dec. 28, 1917, to Feb. 1, 1919, the highest percentage attained for the entire country was 92.2, the output reached in the week ended Sept. 28, 1918. The average for the year 1918, when every effort was being made to speed up the recovery of byproducts, was 86.9 per cent of maximum capacity. The average for 1919 appears to have been about 70 per cent.

#### ESTIMATE OF COKE AND BYPRODUCTS RECOVERABLE

In estimating the coke or the byproducts recoverable from the country's existing byproduct ovens the assumed percentage of operation should therefore not exceed 90 per cent. Indeed, the safer figure of 85 per cent would appear better justified by experience. The present capacity of the byproduct ovens of the country in net tons per annum would therefore be that shown in table X, the yield of coke from coal being taken as 71.2 per cent. the average for 1917-18.

TABLE X. CAPACITY OF BYPRODUCT COKE OVENS IN 1920, IN TONS

|                                    | Coke       | Coal for Charge |
|------------------------------------|------------|-----------------|
| Assuming 90 per cent operation.... | 35,500,000 | 49,800,000      |
| Assuming 85 per cent operation.... | 33,600,000 | 47,000,000      |

The completion of the plants now under construction may raise the capacity to a maximum of approximately 43,300,000 tons, or 36,800,000 tons under an operation of 85 per cent. In connection with the supposition that a limit to the production of byproduct coke may be reached, it may be noted that this quantity is 65.2 per cent of the coke produced in 1918, the largest quantity ever used by the country in one year. It is 69 per cent of the coke required for producing 49,666,000 gross tons of pig iron, the annual capacity of the coke-burning blast furnaces completed or building on Jan. 1, 1919, according to the annual statistical report of the American Iron and Steel Institute, the coke consumption being taken at 2,375 lb. per gross ton of iron. It is 61.7 per cent of the country's total requirements for coke in the war year 1918, as estimated by the United States Fuel Administration, less sales of gas-house coke, amounting to 1,814,000 tons.

Final statistics showing the quantity and value of byproducts recovered in 1919 are not yet available, but an idea of the quantity may be obtained by multiplying the number of tons charged into the ovens in 1919 by the average quantity of byproducts recovered in 1918 per ton.

TABLE XI. AVERAGE RECOVERY PER NET TON OF COAL CHARGED INTO BYPRODUCT OVENS IN 1918

|   |      |
|---|------|
| Ammonia (all forms) expressed in terms of equivalent ammonium sulphate, pounds..... | 18.9 |
| Tar, gallons.....   | 7.1  |
| Crude light oil, gallons.....   | 2.4  |
| Gas, 1,000 cubic feet.....  | 10.4 |

The figures, if multiplied by the 35,353,000 net tons of coal charged in 1919, as estimated from known coke production on yield of 71.2 per cent—the average for 1917-1918—would give 668,200,000 pounds of ammonium sulphate or its equivalent, 251,000,000 gallons of tar, 84,800,000 gallons of crude light oil, and 367,700,000 cubic feet of gas.

For purposes of comparison the actual production of byproducts in 1918 is reprinted below.

TABLE XII. BYPRODUCTS OBTAINED FROM COKE-OVEN OPERATIONS IN 1918

| Product   | Production  | Sales       | Value of Sale  |
|---|-------------|-------------|----------------|
| Tar..... gal.                                     | 263,299,470 | 200,233,002 | \$6,364,972    |
| Ammonia:  |             |             |                |
| Sulphate..... lb.                                 | 436,388,134 | 423,515,836 | 19,061,777     |
| Liquor..... gal.                                  |             |             |                |
| Anhydrous or free ammonia (a)..... lb.            | 65,230,159  | 61,442,933  | 7,381,174      |
| Gas:  |             |             |                |
| Illuminating and household purposes..... M.cu.ft. |             |             |                |
| Industrial purposes..... M.cu.ft.                 | 385,035,154 | 33,437,991  | 7,130,113      |
| Benzol products:                                  |             |             |                |
| Crude light oil..... gal.                         | 87,222,450  | 3,764,272   | 963,042        |
| Secondary light oil..... gal.                     | 339,644     | 121,191     | 15,472         |
| Benzol..... gal.                                  | 44,804,900  | 43,441,980  | 11,966,367     |
| Toluol..... gal.                                  | 8,861,948   | 8,541,366   | 12,249,702     |
| Solvent naphtha..... gal.                         | 3,540,162   | 3,123,815   | 439,983        |
| Other oils..... gal.                              | 636,707     | 571,752     | 53,880         |
| Crude naphthalene..... lb.                        | 10,614,799  | 10,403,758  | 287,581        |
| Refined naphthalene..... lb.                      | 5,472,699   | 5,486,689   | 362,648        |
| Other products (b).....                           |             |             | 1,756,345      |
| Total.....  |             |             | \$74,602,458 c |

(a) Includes liquor and sulphate sold by pound of ammonia.  
(b) Includes sodium ferro-cyanide, pyridin oil, nut coke, drip oil, spent oxide residue, coal-tar paint and wash oil.  
(c) Does not include value of 1,999,370 net tons of coke breeze.

If the figures showing the recovery of byproducts per ton are multiplied by the number of tons given above as the annual coke capacity of the ovens now built and building in the United States, namely, 36,800,000 tons—a moderate estimate, assuming 85 per cent operation—the annual capacity for the recovery of byproducts by the end of 1920 will become 977,100,000 pounds of ammonium sulphate, or its equivalent, 367,000,000 gallons of tar, 124,000,000 gallons of crude light oil, and 537,300,000,000 cubic feet of gas.

### Harlan Miners and Guards Fight

**B**ANDS of mine workers are searching the woods of Harlan County on the Kentucky-Virginia border for the operatives of a protective agency who were alleged to have started a fight at Wallins Creek on Saturday night, March 20, which resulted in the death of three persons and the wounding of several others.

It is said that the Kentucky Steam Coal Co. imported onto their mine holdings a number of guards or detectives, to take care of the property, a strike of the mine workers being in progress, and that a clash resulted in which Bud Taylor, a miner; Deputy Sheriff John Burke and James Hall, a detective, tried to arrest a son of Bud Taylor. This precipitated the battle, which at first was a duel between Taylor and Hall, but soon became a general mêlée as the result of mine workers and guards arriving on the scene.

More than one hundred shots were fired before the detectives were driven to retreat. Much ammunition is said to have been received by the mine workers and a general strike was expected on April 1.



# Safe Plan for Taking Powder Into Mines

Powder Is Placed by the Shaft Tender in Non-conducting, Tight Boxes, Each Holding Five Kegs—  
The Boxes Are Lowered One at a Time in an Otherwise Empty Cage Trip.

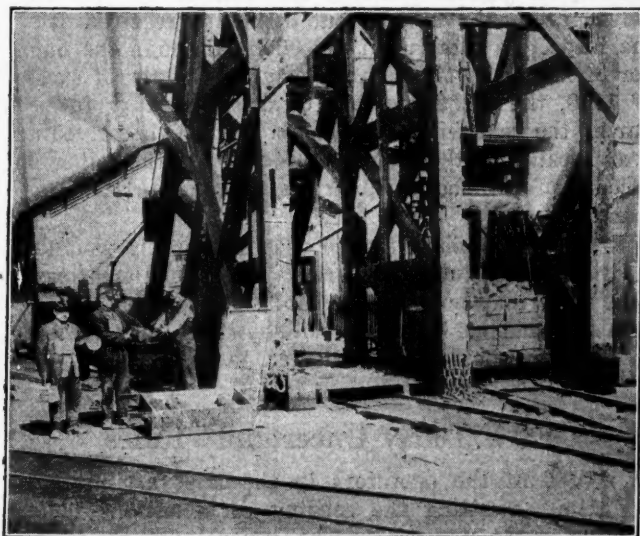
By DEVER C. ASHMEAD  
Tarrytown, N. Y.

**S**AFETY FIRST is one of the slogans of the Kingston Coal Co. of Kingston, Pa. Handling powder at a mine is probably one of the most dangerous of operations and one in which every possible precaution should be carefully considered. Ways and means therefore should be provided for reducing the danger



**COAL COMPANY'S IMPOSING POWDER MAGAZINE**  
Miner receiving his powder supply. He is here given the powder sign, which he has already around his neck, so as to give proper warning to all around him that he is handling explosive material.

of accident arising from explosions. Unfortunately, there have been in the past numerous instances where, from some cause or other, explosions have occurred causing very serious loss of life. Probably the most disastrous recent occurrence of this nature was that



**SHAFT TENDER RECEIVING POWDER FROM MINERS**  
The miners are required to deliver the powder to the shaft tender who places it in specially prepared box which holds five kegs.

at the Baltimore Tunnel, where 92 men were killed.

At the mines of the Kingston Coal Co. the greatest care is taken to prevent accidents of this character. Rules, regulations and instructions are provided so that the men will take the proper precautions, willingly, if possible, but if not willingly they are made to be reasonably cautious by the mine officials.

In the morning, when going to work, the men who have powder orders take them to the magazine, where they are filled. Each man is given a large red tag on which the word powder appears in white. Strings are attached to this sign and it is hung around the man's neck. In one of the accompanying illustrations a miner is seen at the powder magazine receiving his sign preparatory to hanging it around his neck. As may be observed in the same illustration the magazine is well and attractively constructed of concrete.

After the miner has received his powder and his



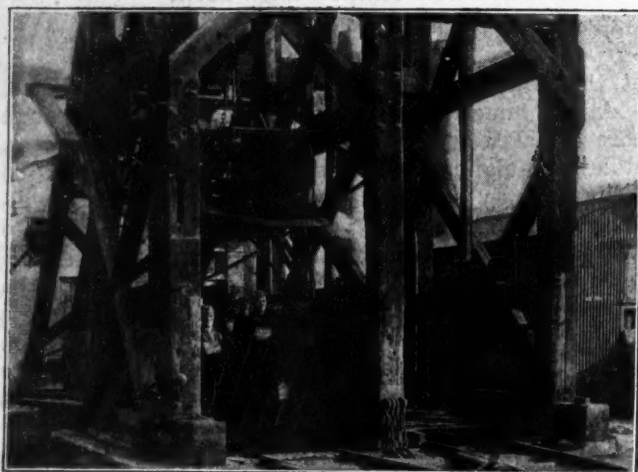
**FILLED POWDER BOX READY TO BE LOWERED**  
Note the box on the floor of the otherwise empty cage. No men are permitted to ride on this trip, thus avoiding danger from the falling sparks of the mine works' exposed lights.

sign he proceeds to the shaft down which the powder is to be sent. The explosive is delivered by the miner to the shaft tender, who places it, as shown in one of the illustrations, in a specially constructed box. This is just the proper size to hold five kegs of powder and has handles on each end for convenience in carrying.

There is a well-built and strong cover for the box to protect it from falling articles or flashes of fire. The box is a non-conductor and protects the contained explosive from electric discharges. Both sides of the box bear the word "Powder" painted in large red letters, while on the top also in red are the words "Safety First."

The next illustration shows the box containing the powder placed on the platform of the cage ready to be

lowered into the mine. No men are allowed on the cage while the powder is being lowered. This removes the danger incident to the men carrying lighted lamps while on the powder cage. If there is an accident from other causes there are no men on the cage to be



**MINERS WAITING ON CAGE TO BE LOWERED**

On the next trip to the one on which powder is sent down the miners are lowered and when they reach the bottom their powder is given them to carry on foot to the working face.

hurt and in that case the damage will be done only to the company's property.

The last illustration shows the men, whose powder has been sent below on the previous trip, just about ready to descend into the mine, where they will receive their kegs of powder and will surrender their tags. Underground the men are not allowed to transport their powder on trips, but must carry it by hand to their working places.

## With Decline in Tonnage, Fatal Accidents Decreased in 1919

**Fatality Rate Per Ton Increased Slightly—Surface Fatalities Declined 25 Per Cent; Mine Cars and Locomotives, 28 Per Cent; Coal and Rock, 15 Per Cent**

A COMPLETE statement of the coal-mine fatalities occurring throughout the United States during the calendar year 1919 has just been issued by the Bureau of Mines, Department of the Interior.\* The reports received from the inspectors for the year just closed show a reduction of 10.58 per cent in coal-mine fatalities as compared with 1918, while in 1918 the reduction was 4.5 per cent from 1917 figures. The total number killed was 2,307 in 1919 and 2,580 in 1918, a reduction of 273.

There was a decrease of 128, or 25 per cent, in fatalities resulting from mine cars and locomotives, and a decrease of 198, or 15 per cent, in the fatalities due to fall of coal or rock. Surface accidents show a decline of about 25 per cent as compared with the previous year. There were, however, increases in accidents due to gas and dust explosions and also explosives. There occurred during the year nine disasters in which five or more men were killed, representing a total of 201 fatalities.

\*Copies of this publication may be obtained free of charge by addressing the Director of the Bureau of Mines, Washington, D. C.

The worst disaster of the year was the one occurring at the Baltimore Tunnel 2, Wilkes-Barre, Pa., resulting from the explosion or burning of a number of kegs of powder, by which 92 lives were lost. This disaster emphasizes the need for stricter regulations relating to hauling men and explosives into the mine at the same time. The question of whether electricity was responsible or not does not affect the consideration of the various dangers which arise in underground transportation and handling of explosives.

At best the handling and hauling of explosives is hazardous, and such being the case, no one, other than the necessary attendants, should be permitted to ride in cars or cages transporting explosives. As a result of this disaster, the report of the coroner's jury to the Governor of Pennsylvania brings out some important dangers to be avoided in the use and transportation of explosives.

The conditions under which the mines were operated in 1919 were not normal, as the country had not become adjusted to the new commercial conditions brought about as a result of the war. There were numerous labor troubles during the year and on Nov. 1 a strike almost completely shut down the central bituminous field, with the result that but little coal was mined during the month of November and the early part of December.

According to the preliminary estimates of the U. S. Geological Survey for the year 1919 the total production was 458,063,000 tons of bituminous coal, which is a reduction of 121,323,000 tons as compared with the previous year. The anthracite production is estimated by the U. S. Geological Survey as 86,200,000 tons, or a reduction of 12,600,000 tons from the preceding year.

While the actual number of fatalities is considerably less than in 1918, the ratio, on a tonnage basis, is slightly higher. The number of tons produced per fatality in 1918 in the bituminous mines was 285,552, as compared with 275,000 tons per fatality in 1919. In the anthracite field the production per fatality in 1918 was 262,873 tons, as compared with 135,700 tons per fatality in 1919. The average for the entire coal-mining industry was 235,900 tons per fatality, as compared with 262,873 in 1918, 241,618 in 1917, 265,094 in 1916, and 234,297 in 1915.

Complete figures showing the number of men employed are not available, but estimates received from the inspectors total about 765,000. Although the number of names on the payrolls may be slightly in excess of 1918, the actual number of days' labor performed during the year will be much less than in the preceding year because of the irregular working of the mines on account of car shortage, strikes and the unsettled demand for coal.

When the number of employees is properly weighted on the basis of full-time workers, the reduction in accident rates may not be as great as first appears. This rate on a tonnage basis does not show any improvement; in fact, the contrary is indicated.

## Even Today Uncertainty Rules

MOST of the operators in the East are marking time, awaiting the settling of conditions before naming contract prices. The general feeling is one of hesitancy. The operators are asking: Are the prices being contracted for likely to be stable and would it be well to follow them in making other con-



tracts? There is a fear on the part of the smaller operators that the large companies may "bear" the market. The large companies, however, are afraid that the little fellows, by reason of an incorrect knowledge of costs, will undercut prices.

In a few instances, quotations have been made to large consumers, of \$3.50 for r.o.m. and \$4.00 for 1-in. lump from the Pittsburgh District; and \$3.75 to \$4.25 from central Pennsylvania. These prices are basic for April 1, and subject to whatever increase in mining rates may be applied thereafter.

Several large contracts have been closed in recent weeks "at the government rate while the same lasts, and a price be agreed upon thereafter," thus protecting the consumer's tonnage. It does not appear probable that definite prices may be expected in all districts before another week.

## Alaska Lignite Makes as Much Steam Per Pound as Cord Wood\*

After 14 Months It Had Lost 6.08 Per Cent in Weight, Mostly Moisture—Weathered Only Where Unprotected by Lignite in Pile

THE Fairbanks (Alaska) Station of the Bureau of Mines has recently completed two series of tests designed to determine, first, the comparative steaming value of Alaska lignite and spruce wood, and second, the resistance of lignite to weathering when stored in piles in the open. The tests were made under the direction of John A. Davis, superintendent of the station, who was assisted by Paul Hopkins and John Gross. These investigations are of special interest to Alaska, since much has been written about the large lignite fields of the Nenana district and their possible value as a fuel supply.

The steaming tests were run to determine the relative value of lignite and spruce wood in the small boilers commonly used in the mining camps of Alaska. Spruce wood has been used for steaming purposes almost exclusively in the past, but the price has risen from \$7 to \$20 per cord in the last 15 years, and other sources of fuel are sought. The lignite used in the tests was not of the highest quality, since it was obtained near the surface. Both the wood and the lignite were carefully weighed, sampled and analyzed, so that the results of the tests could be accurately compared. The boiler used was one of a battery of two horizontal water-tube boilers, each rated at 125 b.hp. Two grades of lignite, one from the Lynn mine and one from the Burns mine, and one grade of wood were tested.

The results showed that under the conditions of these tests, when compared pound for pound, the value of spruce wood lay between the values of the two samples of lignite. The relative water evaporations per pound of fuel were: Lynn lignite, 3.06; Burns lignite, 3.99; spruce wood, 3.68 lb. However, in comparing a cord of wood with a ton of lignite, it was shown that a cord of wood is equivalent to more than a ton of lignite from either mine.

In the weathering tests several hundred pounds of Nenana lignite were used. It was first carefully sampled for analysis and then sized through a series of rings from 3/4 in. to 2 in. in diameter; 80 per cent of the sample was retained on a 1-in. ring. The lignite was

then spread in shallow trays and placed on the roof of the station, where it was allowed to remain, fully exposed to the weather, for fourteen months. At the end of a week it was noticeably weathered on the surface and at the end of a month it had broken up into small pieces.

At the end of the test period it was found that the surface portion, immediately exposed to the atmosphere, was entirely disintegrated, while that farthest from the surface was only partly disintegrated, although very fragile. Over 50 per cent would then pass through a 3/4-in. ring and 85 per cent through a 1-in. ring. The average loss in weight through weathering was 6.08 per cent, mostly moisture.

The weathering at the end of 14 months, however, seemed only slightly more than that at the end of one month. In large piles only, the surface to a depth of 4 in. to 6 in. would weather badly and the material beneath would be so protected as to suffer little change. These tests show that the behavior of these lignites is substantially the same as that of North Dakota lignite.

## "Right" of Strikers to Obtain Reinstatement

ON MARCH 25 was reported in the "Coal and Coke News" department under Birmingham, Ala., the decision of Judge E. H. Dryer, umpire between coal operators and mine workers, to the effect that when a man goes on an illegal strike he cannot demand reinstatement. A case in the West Virginia mines shows to what extravagant lengths such reinstatement claims are stretched.

For declining to reinstate a check-weighman who had refused to report for work even after the conclusion of an illegal strike the Price Hill Coal Co., operating at Price Hill, Fayette County, has been subjected to a somewhat prolonged strike at the mine mentioned. Its mine workers to the number of 85 went on strike in the first instance, not over the appointment of a check-weighman but because the company failed to employ two brakemen on its coal trains.

Upon the failure of the company to provide these two men a strike followed. It lasted only a few days, however, when 75 men out of the 85 returned to work. The old check-weighman was not among those so reporting and consequently another check-weighman was chosen. When, after the lapse of about a week, the old check-weighman appeared and demanded his old job the company refused to displace the new man.

Upon the refusal of the company to make the change the mine workers went on strike again. Heretofore there has been little friction between the miners and the management of the Price Hill Company, that company having been one of the companies which early put the check-off system into effect.

## Resent Reduction in Mining Rate

FOR several days the mine workers at No. 10 mine of the Big Muddy Coal and Iron Co., near Murphysboro, in Jackson County, Illinois, have been on strike, the men, who number 130, declaring that the company has endeavored to reduce the rate of pay for the mining of low coal.

President McAllister, of the 8th Sub-District, United Mine Workers of America, advised the men to return to work pending adjustment of the matter, but they

\*U. S. Bureau of Mines Monthly Reports of Investigation.

refused to do so. Company officials say they will not undertake any adjustment while the men remain out of the mine, and the men refuse to return to work until the matter has been satisfactorily adjusted.

It may be gathered from the action of the union officials that the strike is not against the violation of a definite scale but for the perpetuation of some alleged concession relating to a small portion of the mine.

## Mobile Protests Against High Coal Export Rates

Differential of \$1.50 Less Than South Atlantic Ports Has Not Been Put in Effect

**M**AINTEINING that the differential of \$1.50 on export coal from Mobile to South American ports below the rate applying from Charleston and Norfolk has never been put into effect, T. C. McGonigal is preparing to go to Washington within a few days to take up the matter with the Shipping Board officials there.

Exporters are claiming, it is said, that the schedule published by the shipping board Jan. 9, said to be the last received by the local office, does not allow the differential. According to information given out at the Shipping Board office the matter of whether this is provided in the latest schedule is being investigated.

Through the efforts of Traffic Manager Cobb of the Chamber of Commerce and coal exporters the Shipping Board several months ago ruled that Mobile was entitled to a lower rate than South Atlantic ports, but failed to publish the rates. After a time a committee from Mobile went to New Orleans to see M. P. Billups, then in charge of this division, in regard to putting the rates into effect and was assured by him that they would become operative at once.

That was on Jan. 5, and as the decision was made even earlier, it has been the opinion of local shipping board officials, according to J. G. Santa Cruz, in charge of the local office, that the rates published for Jan. 9 included this reduction. Mr. Santa Cruz stated that he is making an effort to have the matter cleared up.

## Public Should Not Buy Too Early Is Opinion in Washington

May Cause a Runaway Market—Middle West Market Is Weak Already—Not Advisable to Store Coal Subject to Spontaneous Combustion

**W**ITH an open market and with the "buy early" legacy left by the President's Bituminous Coal Commission, coal specialists in Washington fear a runaway market. As nearly as it can be calculated the amount of coal stored in the country is negligible. Since no one is under the delusion this year that coal prices will be lower in the fall very heavy buying is expected. This tendency is being influenced markedly by the President's request that Federal, state and municipal authorities set the example by storing three months' supply of coal.

The consensus of opinion among those following the coal situation in Washington is that the abnormal rise in prices will be of short duration. It is pointed out

that the bidding up of the price of the more desirable coals is not general, as is indicated by the rather soft market in the Middle West. One factor which is expected to check buying for a month or two at least is the fact that a large percentage of the consumers are not equipped to store a three months' supply of coal.

It is also pointed out that those of the consumers whose use of coal is seasonal hardly can be expected to go more heavily into storage than they did during the war. It also is known that coal men themselves are fully alive to the inadvisability of putting out for storage purposes the class of coal that will not stock. As a result many will not be able to get the class of coal which can be stored profitably until December.

## Freight-Rate Differential Strongly Opposed in the Senate

Railroads Might Hamper Low-Rate Summer Shipments—Frelinghuysen Coal Commissioner Looked On with Little Favor

**S**ENTIMENT on Capitol Hill is not such as to insure the early passage of the Frelinghuysen bill which makes mandatory a differential of 30 per cent in railroad rates in favor of coal moved in the summer against coal moved in the winter. Already members of Congress have been hearing that there are two sides to the seasonal-rate question, and it is certain that extended deliberation will precede the enactment of any statute to that effect.

The desire and need for this method of encouraging summer buying was originated in the West. The East, which represents the greater part of the coal production, is still to be heard from, with some indications that it may have an entirely different opinion as to the beneficial results of special rates. The opportunity which would thus be offered to the railroads to use their influence to delay as much of the coal movement as possible until fall, when there would be a difference in the freight rates of as much as 40c. a ton, also is being considered. The temptation would be great to find ways of keeping as many cars as possible out of coal transportation during the low-rate period.

Even in the Middle West an important economic factor would have to be met in attempting to keep the coal mines working steadily throughout the summer. If these mines were to be kept busy throughout the spring and summer some are of the opinion that the Middle West would be forced to discontinue the greater part of its farming. It is said that with abundant opportunity for men to work in the coal mines at the present high rates of pay it would be impossible for farmers to secure labor.

Despite the argument against the seasonal variation in railroad rates the probabilities point to the application of the idea in some modified form. Any step in that direction, however, is not expected to be immediate, and even Senator Frelinghuysen, who is an enthusiastic champion of the seasonal regulation of rates, says that nothing much can be done in the matter just at present. The Interstate Commerce Committee of the Senate has made no provision for a hearing on the Frelinghuysen bills.

Nor is the bill providing for a Coal Commissioner meeting with favor. Many are of the opinion that it would be impossible to administer a law setting forth duties of such a far-reaching character.



## Tilson Would End Lever-Act Powers of President Wilson

**Leaves Federal Trade Commission Power to Make Inquiry as to Production Costs—Gives President Thirty Days to Wind Up Regulation**

**I**N ORDER to end the excessive regulation of coal by the President, Representative Tilson introduced on April 1 H. R. 13,405, terminating "certain powers of the President in respect of fuel." Section 1 repeals the provisions of Section 5 of the Lever Act in so far as they apply to fuel, including fuel oil and natural gas. Section 2 modifies Section 25 of the same act giving the Federal Trade Commission the power to "make full inquiry, giving such notice as it may deem practicable, into the cost of producing coal and coke under reasonably efficient management at the various places of production," exercising such powers as were given it under the act creating the commission approved Sept. 26, 1914.

Section 3 extends "the powers of the President, the Federal Trade Commission and any other agency of the Government to fix the price or to regulate the method of transportation, sale, shipment, distribution, apportionment and storage of coal and coke for 30 days after the passage of this act, to the extent that may be necessary to complete the shipment and regulate the price of coal or coke in transit at the time of the passage of this act, in accordance with the provisions of any regulation or order issued in the exercise of such power with respect to diversion of such coal or coke." The President is authorized and required to wind up "all matters arising out of the exercise of the powers terminated thereby" in 30 days.

Section 4 prevents the act from being regarded as pardoning offenses committed against the Lever Act when in full force and effect, whether committed prior to the passage of this act or during the 30 days sequent on its approval.

## West Virginia Will Not Strike

**No Conferences Will Be Held Until Settlement in Central Competitive Field—27 Per Cent Increase Probably Will Be Paid**

**O**PERATORS and miners in both District 17 and District 19, United Mine Workers of America, though belonging to what is known as the outlying districts, are expected to ratify the action taken in New York on March 29 when a 27 per cent increase in wages was agreed upon, and in fact to ratify whatever agreement may be made as to working conditions, etc. However, no conferences looking to an agreement on a wage scale and other matters requiring agreement will be held between operators and miners of the organized fields of West Virginia until negotiations between the operators and miners of the Central Competitive Field are consummated.

No statement has been made by West Virginia operators as to whether the 27 per cent increase agreed upon in New York would be paid in the organized fields of West Virginia, but it is taken for granted generally that they will do so, although when all wage contracts in West Virginia except those of the New River field and

of the Kingston Wesley districts on Paint Creek expired on April 1 there was no cessation of work on the part of miners except to celebrate the anniversary of the establishment of the eight-hour day, nor, in the opinion of Fred Mooney, secretary of District 17, U. M. W., and of T. L. Lewis, former national president of the United Mine Workers, but now secretary of the New River Operators' Association, will there be any cessation.

Any agreements which may be reached in District 17, covering the Kanawha and northern West Virginia fields, and in District 29, covering the New River field, will be modeled largely after the agreement for the Central Competitive Field. Indictment of Central Field operators and miners for entering into "check-off" agreements may have a bearing on the continuance of the check-off system in West Virginia, although so far there has been nothing whatsoever to indicate that outcome.

## Bill to End Federal Coal Control

**Measure Introduced in the House Also Provides That No Railroad Shall Seize or Divert Coal**

**J**OHAN M. ROBSION, of Kentucky, introduced into the House of Representatives March 23, 1920, a bill to terminate Federal control of the coal and coke industry and to end the confiscation and diversion of coal and coke by common carriers (H. R. 13,231).

It terminates "the power and authority to license the importation, storage, mining and distribution of coal or coke; to requisition coal or coke; to requisition or operate the plant, business or any appurtenances thereof belonging to any producer of, or dealer in, coal or coke; to fix prices for coal or coke; to regulate the production, sale, shipment, distribution, apportionment or storage of coal or coke, and all powers and authority incidental thereto, conferred on the President, or on any other agency of Government in pursuance" of the Lever Act, except that such powers shall continue in effect for 30 days after this act becomes law to the extent that may be necessary to settle up all matters, affairs and transactions growing out of the exercise of such powers and authority and the execution of the provisions of the Lever Act.

This termination of the power and authority of the Lever Act shall not affect any act done, or any right or obligation accruing or accrued, or any suit or proceeding commenced in any civil case before the date this new act becomes law; but all rights and liabilities under the Lever Act, arising before the termination of its authority shall continue and may be enforced in the same manner as if such powers and authority had not been terminated. Any offense committed, and all penalties, forfeitures, or liabilities incurred prior to such termination may be prosecuted or punished in the same manner and with the same effect as if such authority had not been terminated.

Section 1 of the Interstate Commerce Act is amended by adding the following paragraph: "Hereafter no carrier by railroad subject to this act shall confiscate, seize, or divert for its own use, or for any other purpose, whether with intent to make proper compensation therefor or not, any coal or coke of which it is in possession solely as a common carrier, and which the owner has not voluntarily sold or transferred, or entered into a contract to sell or transfer, to such carrier by railroad."

# Open-Price Bureau and Scheme to Sustain Price Declared Unlawful

**American Hardwood Manufacturers Association Conducted "Plan" for Open Prices, Reports on Stocks on Hand, Output and Circulated Statements Propheying and Urging High Prices**

ONE of the leading activities of the National Coal Association has been to establish a practice of reporting the price of coal as sold by members who were willing to divulge this form of information just as stock exchanges report sales of stocks, grain, cotton, etc., for the good of the public and the information of members. Since the National Coal Association is about, with the end of Federal control, again to keep a record of its selling prices it naturally inquires—Are the courts likely to adjudge such actions as being an attempt to sustain prices and to "restrain trade and commerce" in violation of the terms of the Sherman Act?

In this connection the judgment of John E. McCall, United States District Judge, who as an outcome of hearings on March 8, 9 and 10 held at Memphis, Tenn., filed an opinion granting a preliminary injunction to the United States in the case against the American Column and Lumber Co. and 332 other defendants, is of great interest. The counsel of the National Coal Association believes that its new Bureau of Economics is not in violation of the law, being unaccompanied by an attempt to maintain prices and being conducted as a bureau of record without any sinister intention of any kind.

The Government showed in the case of the American Hardwood Association, the association of which the American Column and Lumber Co., and the 332 persons enjoined were members, had an "Open-Competition Plan" under which the members of the plan continuously exchanged with one another, through a common secretary, reports showing their respective rates of production and stocks on hand, and also showed the prices which each member had received on actual sales of lumber.

Notwithstanding the affidavits of practically all of the defendants that there had been no agreements between them to increase prices, Judge McCall held that—

It cannot be with reason denied that defendants formed a combination to promote the interests of the members of the plan by maintaining price levels, and it is difficult, if not impossible, on this record to escape the conclusion that the purpose and intention of the plan was to suppress competition among its members in the hardwood-lumber manufacturing business, wherein the production of hardwood lumber was to be kept low enough to maintain prices on an ascending scale but not so low as to drive prices to such heights that consumers

would be induced to use substitutes. These two objectives mark the margins of the channels through which the members of the plan conducted by its manager of statistics were to steer interstate commerce in hardwood lumber and through which it was successfully steered on up to the filing of this bill.

Therefore he enjoined the defendant from continuing to exchange the reports in question.

This proceeding was of a civil character; but the Department of Justice considers that the law as applied in the case is clearly established. The members of other similar organizations will not be considered by the department as entitled to conduct operations of a like

**National Coal Association is about to resume the practice of reporting coal prices with the end of Federal control. Counsel of the association believes its new Bureau of Economics is not in violation of law, as it is being conducted solely as a bureau of record. The decision of Judge McCall granting a temporary injunction in Hardwood Association case is of much interest in this connection.**

nature in future because they may have filed papers at Washington, or because of other similar reasons; and the department will, if necessary, institute proceedings of an appropriate character to enforce the law. The judge in his opinion said:

The bill of complaint is brought under section 4 of an Act of Congress, 26 Stat. L., 209, by the United States of America against the American Column and Lumber Co. and 332 other manufacturers of hardwood lumber, residents and citizens of some 16 different states, charging the defendants with combining and conspiring together to suppress competition among themselves and to enhance their selling prices for such lumber, in restraint of interstate commerce, in violation of section 1 of said Act of Congress, which is as follows:

Every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several states, or with foreign nations, is hereby declared to be illegal.

It is alleged that the defendant companies comprise the most important manufacturers of hardwood lumber in the United States and have been engaged for a long time in cutting down trees of the hardwood varieties and converting them into logs; in moving such logs to sawmills and lumber factories; in manufacturing them into lumber; and in the selling and shipping of such lumber, in interstate commerce, to manufacturers of sashes, doors, flooring, mill work, etc., and to other manufacturers and to wholesale and retail dealers for the purpose of resale. It is charged that at the beginning of the year 1919 the defendant companies were still demanding for their lumber approximately the same prices that had prevailed before the signing of the armistice in the war with Germany, and that manufacturers and wholesale and retail dealers were buying from the defendants only in small quantities, for the purposes of immediate necessities, in the belief that the prices de-



manded were too high. The latter expected to largely increase their purchases of such lumber from the defendants, in interstate commerce, as soon as the prices should be reduced by competition among the defendants to more reasonable levels.

Under these circumstances, in January, 1919, and continuously thereafter to the present time, it is further alleged that the defendant companies and individual defendants unlawfully combined and conspired together, in restraint of interstate commerce in hardwood lumber manufactured by them, to maintain the prices demanded in said month of January, 1919, for their lumber and to double and treble the prices, in violation of the said Act of Congress and against the public policy of the United States, by suppressing competition in prices among the defendants; by substituting therefor co-operation and agreements among themselves having the purpose and effect of maintaining and increasing prices.

The bill then proceeds to state the means resorted to by the defendants to accomplish the purpose of the alleged combination and conspiracy, which are in substance as follows (hereinafter referred to as overt acts): By joining together as members of a so-called "Open Competition Plan" under the slogan "Co-operation, not competition, is the life of trade"; and by providing and financially supporting at Memphis, Tenn., a suite of offices, clerical force and the defendant, F. R. Gadd, as manager of statistics, for the successful operation of said plan; by dividing the members of the plan into four geographical groups and holding meetings of each group each month; by printing and causing to be distributed among the defendants recommendations to make oral agreements at such meetings to eliminate competition among these defendants who had been competing.

#### MEMBERS REQUIRED TO MAKE STOCK REPORTS

By this means parties to the plan proposed to suppress "evil practices," meaning thereby the practice of competing in prices so as to secure business, by requiring each member of the plan to make monthly "stock reports" to the manager of statistics, showing the normal stock, the entire actual stock, the unsold stock, of each defendant company; and also to make to said manager "production reports," showing the normal monthly production, the actual monthly production, and the estimated future production of each defendant company; and also "sales reports," showing separately each actual sale of hardwood lumber made by each defendant company, giving the name of the buyer, the kind of lumber sold, the destination, and the selling price; by having these reports tabulated by the manager of statistics and distributed among the members of the plan.

The bill also charges that the plan provided for distributing among the defendants printed recommendations to discuss prices at their monthly meetings, and orally discussing at such monthly meetings said stock reports, production reports, and sales reports, so as to produce at each of such meetings a mutual exchange of oral statements of approval of high prices reported in the sales report as assurances that the defendants would further sustain such prices by maintaining prices as high as or higher than such prices; the mutual exchange each month through the manager of statistics in connection with the production reports, written predictions by the several defendants that high prices reported in the sales report would continue to be maintained and enhanced, so as to thus furnish further assurance that the action of each defendant in maintaining and enhancing

such prices would be supported by like action on the part of other members of the plan.

A further feature alleged to be part of the plan was the practice of the manager of statistics to distribute among the defendants printed expositions of the theory of each defendant, to be observed as a guide to prices reported as received by other defendants, to the effect that that knowledge regarding prices actually received was all that was necessary to keep prices at reasonably stable and normal levels, there being no agreement to follow the practices of others, although members naturally followed their most intelligent competitors if they knew what their competitors had been actually doing, this being the theoretical proposition at the basis the Open Competition Plan.

#### EDITED REPORTS TO DISCOURAGE LOW PRICES

Questionnaires are said to have been sent out by the manager of statistics to each member of the plan asking for information showing how the theory of the open competition plan worked in practice, and the manager of statistics edited these answers and caused to be distributed among the members such parts of them as tended to show that it was successful in producing a steady advance in the prices of their products. The manager of statistics is said also to have printed and caused to be distributed among the defendants arguments against low prices, on the ground of shortage of lumber disclosed by the stock reports, and explaining how the disclosure of such shortage in the stock reports prevented prices from being lowered, followed by arguments for still higher prices on the ground of the shortage disclosed, for continued co-operation to secure higher prices on the ground of shortage in stocks, and the elimination of competition, causing to be reprinted with approval and distributed among the members statements emphasizing the advance of prices following the shortage of lumber and urging the defendants against increasing production by night work, which would in effect "kill the goose that laid the golden eggs" and would be criminal folly.

The arguments were coupled with the suggestion made in the sales report that the combination or association called the "Open Competition Plan," to maintain and enhance prices, would not be prosecuted; that prices would continue to advance so long as the shortage of lumber was maintained, and that the Sherman Law, designed to prevent the restraint of trade, should be repealed.

#### COURT ASKED TO ENJOIN PRICE CONTROL

It is further alleged that similar means are still being employed and are about to be further employed by the defendants, at Memphis and elsewhere, in consummation of their alleged unlawful combination and conspiracy to maintain the prices of hardwood lumber at and enhance it beyond the present high levels, in restraint of interstate commerce in such lumber. It is the doing of these things by the defendants, characterized as overt acts, that the Court is asked to enjoin.

The defendants file a sworn answer, in which they substantially admit doing these things charged in the bill, characterized as overt acts. They deny that they were wrongful acts and assert that the defendants were clearly within their rights under the law in the course which has been pursued, and especially do they deny every charge or intimation in the bill of any unlawful combination or conspiracy and that the doing of those

things did not and does not restrain trade in interstate commerce, but on the other hand it is asserted that the Open Competition Plan promotes competition in interstate commerce and especially among the members of the plan in that it furnishes them with information by which they can more intelligently and effectively conduct the management of their business as manufacturers of hardwood lumber.

#### MANAGER OF STATISTICS SUPPLIED DOCUMENTS

They deny that the defendants, by their course of conduct as charged in the bill, curtailed production, suppressed competition in, or maintained and increased prices of manufactured hardwood lumber. Much documentary evidence and many affidavits were introduced in support of the contention of the respective parties, all of which were documents coming from the office of the manager of statistics or affidavits of the defendants themselves, except a certain line of affidavits by parties who were not members of the plan but who were dealers in hardwood lumber, or furnished supplies to the defendants for the manufacture thereof.

In the view the Court has taken of the case these later affidavits, in so far as they are material to the question to be decided, are but expressions of opinion of the party making the affidavit. It should be said that the affidavits made and filed by the defendants do not controvert the allegations made in the bill of overt acts, but they do deny that affiants were parties to any combination or conspiracy or agreement to restrain trade in interstate commerce in the hardwood manufacturing business, by suppressing competition in prices among themselves or otherwise.

As the Court understands this record, there is no conflicting evidence to reconcile, since it comes entirely from the defendants and, whatever the case is for the Government, it is made such by the acts and words of the defendants, or some of them, themselves. It, therefore, remains for the Court to determine whether the conclusions drawn from the evidence of the Government, as stated in the bill of complaint, are in its judgment warranted.

#### QUESTION OF CONSPIRACY CONSIDERED

The first question arising is, whether the defendants in associating themselves together under the so-called "Open Competition Plan" thereby formed a combination or conspiracy. In other words, was there in the minds of two or more of the defendants a design to accomplish by and through the plan a common purpose? If so, there was a combination or conspiracy, since a combination or conspiracy consists only in a mere meeting of the minds of two or more persons to accomplish a common purpose.

A combination or conspiracy is not necessarily unlawful, but if unlawful, then anything done or said by a party thereto to consummate the unlawful purpose need not in itself be unlawful. So, also, a combination or conspiracy in itself lawful may be made unlawful by acts in furtherance thereof which are themselves unlawful. An unlawful conspiracy, when proven, may be brought under condemnation of law by proof of facts and circumstances done in furtherance thereof which are not in themselves unlawful. So a conspiracy which has for its object the accomplishment of a lawful purpose may be brought into condemnation of the law by doing unlawful things to consummate that purpose.—(*Pettibone vs. United States*, 148 U. S. 203, *Bouvier's Law Dictionary*, Vol. 1, p. 621.)

It cannot be with reason denied, nor indeed do I understand that it is denied by the defendants, that they formed an association, a combination, or an agreement to promote the interests of the members of the plan who were engaged in the manufacture of hardwood lumber, by maintaining price levels.

The second and more difficult question is, did and does

this combination or association restrain trade in interstate commerce, within the meaning of the law? If so, it is unlawful, and any act done or anything said or written by any member of the plan in furtherance of its object was the act of all and the injunction should issue.

The evidence shows that the defendants were members of the American Hardwood Manufacturers' Association (hereinafter called the association), but that all the members of said association are not members of the "Open Competition Plan." Query: What benefits did those members of the association who joined the plan expect to derive from it which were not equally available in the association alone? There must have been some additional advantage contemplated and expected. That purpose, I think, can best be determined from the evidence tending to show what the members of the plan said and did from the time of its formation and on up through the months until this suit was filed.

#### A NEW DEFINITION OF THE LIFE OF TRADE

As has been seen, this evidence was created by the defendants themselves, and it is uncontroverted. We come now to consider it. It appears that in the early months of 1919 the stock of hardwood lumber on hand was low, the demand was light, and prices at a comparatively high level. The first sales report by Mr. Gadd, as manager of statistics, was issued on Jan. 25, 1919, and issued weekly thereafter. Quoting from the first one we read:

Co-operation, not competition, is the life of trade. Membership in the plan is not compulsory but members who enter into the plan and practise the idea of a fair deal for all, eliminating suspicion and acting with good will toward each other, will find that returns come back to them with added interest in dollars and cents.

#### February 3:

Before the organization of this plan the members in a majority of cases were competing with each other, even when neighbors without a personal acquaintance.

#### February 8:

The matter of price is the principal point at issue between the buyer and seller. Buyers who have been looking for a downward revision of prices are going to be disappointed. It is no longer merely a question of who can or will hold out the longest—that condition no longer exists. Buying has been resumed after a period of waiting and uncertainty, and it is confidently expected that the move in this direction will long be continued. The tendency to buy only for current needs is less apparent than at any time since the armistice was signed. Stocks remain below normal. Total stocks on hand in the Southern territory are two million feet less, all grades combined, as compared with last month. Production in the Eastern territory, however, is not more than sixty per cent of normal at the present time. The car supply is ample. It must be apparent that the outlook on the whole is favorable for a strong market for all the lumber that can be produced during the coming months.

#### February 15:

There's a reason for everything, and the reason of an association is more than good fellowship, though getting to know the other fellow is usually the first step in the direction of correcting trade abuses.

#### March 1:

The report of stocks on hand sold and unsold as of Feb. 1, 1919, develops a situation that we believe is unparalleled in hardwood lumber industry. In no single month within our recollection has there been such a large and general decrease in stocks on hand as shown by this report. The chief factors contributing to this situation are curtailed production and increased volume of sales. At this rate, it will not be long before there is a famine of hardwood lumber. We hear a great deal about the waiting attitude of the buyer with the expectation of price recession, but with such conditions as are above recited it is difficult to understand why holders of hardwood lumber need worry as to the future. With stocks low and ill-assorted, and with no prospect for restoring them to even last year's meager quantities, the outlook for strong prices on all hardwoods could not be better.

March 8, quoting with approval an article from the Southern Lumberman, the report says:

For instance, at the recent meeting of the Open Competition Plan of the American Hardwood Manufacturers' Association in Memphis, the fact was developed that the production of mills embraced in that group of manufacturers is at the present time only fifty-six per cent of normal, and that practically the same situation exists through the hardwood producing territory. Certainly in any other industry the buyers could never expect anything but an advance in price when the supply is below normal, the production is far below normal, and the demand is improving.



## March 22:

It is one thing for men in a meeting to say, one after another: "My price is so and so," with the result that after the meeting all their prices prove substantially the same as the figures mentioned. It is quite a different thing for the same men to come to a meeting and each report: "My actual sales for the past month have been so and so, and I have reported the details of each transaction to the association."

In the statement there is no direct or implied agreement to maintain prices, no obligation of any kind to refrain from cutting. The theoretical proposition at the basis of the Open Competition Plans is that: *Knowledge regarding prices actually made is all that is necessary to keep prices at reasonably stable and normal levels.*

## March 29:

Naturally the situation ought to have an important bearing on the plans of every hardwood lumberman if the facts were better understood; offers of business now at shaded prices would get scant consideration and there would not only be no good reason to cut prices but there would be every reason why they should be held at reasonable profit-making levels.

With the low stock of hardwood lumber on hand and the reduced production during the first few months of the year, as indicated by the sales reports, the plan, through its manager of statistics, on April 5, began a propaganda to encourage home building, for the purpose of creating a greater demand for hardwood lumber. On the first page of the report of that date there appeared in bold letters the words "Build Now."

Thereafter on June 7 following this propaganda the weekly sales report begins: "The Open Competition Plan to the American Hardwood Manufacturers' Association has arrived; it is an unqualified success and any member or any manufacturer who does not think so is simply overlooking the most important of our several association activities. \* \* \* Read the following excerpts from letters written by members."

I quote only a few:

"We believe we have profited from \$500 to \$1,000 during the past 30 days by being *correctly* informed relative to the prices stock is really being sold at.

## FINDS PLAN PRODUCES HIGHER PRICES

"The very first report which we received under this plan enabled us to increase our price \$6 per thousand on a special item in oak."

"Since we became members we have been selling out lumber at several dollars per thousand more than formerly."

"I consider the report of actual sales of great help in determining the market value of hardwood lumber and believe that the plan is a stabilizing influence, which tends to raise the prices of those who are inclined to cut their prices to the top market prices."

"It is obvious that no one wants to sell his lumber for less than the other fellow is actually getting and your reports of actual sales enable the manufacturer to see what his neighbors are getting for their lumber, and through this course of education, I might say, all those who have access to your reports bring their prices to the top."

"There seems to be a friendly rivalry between members to see who can get the best prices, whereas under the old plan it was cut-throat competition. Now it is a pleasure to sell because we know what we are doing and have information at our finger tips that enables us to know these things before the other fellow does."

There is much other documentary evidence to like effect, but this is enough to indicate the common note running through it all, and that common note is "increase of prices." It is difficult, if not impossible, on this record, to escape the conclusion that the purpose and intention of the plan was to suppress competition among its members and create and perpetuate a condition wherein the production of hardwood lumber was to be kept low enough to maintain prices on an ascending

scale, but not so low as to drive prices to such heights, under the stimulating influence produced by the propaganda to "Build Now," that consumers would be induced to use substitutes.

These two objections mark the margins of the channel through which the members of the plan conducted by its manager of statistics, Mr. Gadd, were to steer interstate commerce in hardwood lumber and through which it was successfully steered, on up to the filing of this bill, until prices of hardwood lumber had increased from 150 to 250 per cent within a period of twelve months.

I do not doubt that some of the defendants, if not all of them, were advised that the plan was lawful and that their participation in its operation was lawful, but their conduct must be here considered in the light of results.

It would serve no useful purpose to analyze the evidence or to enter into a discussion of the decided cases which have heretofore arisen under the Sherman Act. Each case must be determined upon its own facts and if these facts establish the proposition that the combination entered into unreasonably restrains trade in interstate commerce, by suppressing competition in prices, it falls within the condemnation of the act.

Competition and co-operation by and with those engaged in the same business is not necessarily inconsistent. Successful business will likely result from a proper balance of the two, but too much of either may lead to disaster. Competition without co-operation means destructive competition. Co-operation without competition means the destruction of competition—price fixing.\* The latter is the state of the Open Competition Plan, as disclosed on this record.

It results from what has been said that temporary injunction will issue as prayed for in the bill of complaint.

\*Hurley's "Awakening of Business."

## Rules Framed for Prospecting and Leasing Government Coal Lands

Not More Than 2,560 Acres—Lessee May Hold Only One Lease in Any One State—Prospecting Permits To Be Granted

SECRETARY Payne has approved rules and regulations for the prospecting for and leasing of coal deposits of the United States under the act of Feb. 25, 1920. The act provides for the disposition of all coal deposits owned by the United States, except in national parks, military or naval reservations, and in the Appalachian Forest Reserve. Known coal deposits are to be divided into leasing units of not exceeding 2,560 acres each, and one person or corporation may hold but one lease in a state.

Leases for the units are to be offered for competitive bidding at a royalty fixed in advance, not less than 5c. per ton, and awarded to the qualified person bidding the highest bonus. The Secretary of the Interior is authorized to grant prospecting permits to qualified citizens to search for unknown coal deposits or to explore undeveloped lands where preliminary work is necessary to determine the existence or workability of the deposits. In such cases the permittee who finds or demonstrates workable coal deposits may have a lease on such royalty as may be fixed by the Secretary of the Interior.

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## Has The Public a New Heart?

AUSPICIOUS indeed is the news that the Public Utilities Commission and the City Council of Norfolk, Va., have each severally established a platform which reads "Capital legitimately invested in public-utility properties must be safeguarded and protected by municipalities, both as to principal and as to a just and inviting return to the company for expenses incurred in providing service." The resolution was unanimously adopted. Norfolk wants strong corporations to build and maintain public accommodations, and it knows it must pay them a just price or go unserved or badly served. It has showed its faith in the principle that it has enunciated by finding officially that the City Gas Co. of Norfolk was entitled to a price for gas of \$1.64 per thousand cubic feet. However, as the company only asked for \$1.60 the petitioned price was allowed it with the proviso that the rate should be varied to accord with the price of oil used in the manufacture of the gas. Thus, gradually, the United States is getting back the kindly heart to public utilities which it had in earlier days.

## Minority Report of Bituminous Coal Commission

JOHN P. WHITE'S minority report is an odd sort of document. It is not a calm, judicious setting forth of facts from the record and a drawing of conclusions therefrom. It is chiefly a criticism of the majority report, and to bolster up these criticisms and demands it resorts to *prejudicial* citations of facts. One reads it through in the hope of finding something constructive, but lays it down at the end with a sense of disappointment. Evidently it was written after the majority report had been completed and hence took advantage of the fact that Messrs. Robinson and Peale would have no opportunity for reply. The value of the statements in the report are indicated by a few salient features.

Mr. White gives the impression that he accepts the figures covering earnings which were submitted to the Commission by the coal operators. Then he proceeds to cite only those figures which relate to northern Illinois, a small district in which employment conditions are not at all representative of most producing fields in the industry and in which the earnings of men in the coal mines are supplemented by their earnings from other occupations in which they work during the remainder of the year. There is no citation at all of the figures of earnings for such districts as southern Illinois or Pittsburgh, which would give the reader a more complete and fairer knowledge of the earnings of the miners under the Washington agreement.

Another example is the accusation of profiteering which is brought against the bituminous-coal producers. That question is dealt with in the majority report sim-

ply by submitting tabulations from the operators' tax returns to the Treasury, which show that in 1918 the bituminous-coal producers, after paying their taxes, earned only about 9 per cent on their capital invested in the business.

The majority showing here is a simple incontrovertible statement from authentic sources. Mr. White attempts to *twist* these figures to his advantage by resorting to compilations based on "capital stock" instead of capital actually invested, although such compilations would be misleading. The only further information on the subject which he offers is a reference to one of the miners' exhibits, a table of returns of some 32 companies which publish annual statements.

Examination of the names of the companies in that exhibit shows it to be a ludicrous mixture of anthracite operators, lumber manufacturers, byproduct coke makers, bituminous-coal producers, jobbers and retail coal dealers. Yet this hash is gravely submitted as proof of profiteering on the part of the soft-coal operators. Worse yet, it is offered as counterbalancing the authentic Treasury figures on over 1,500 producers. That is astounding stuff to appear in a presumably impartial report of a semi-official agency set up by the Administration to deal with basic problems of industry and labor.

The arguments advanced for the six-hour day cannot impress any serious-minded reader. Mr. White's very presentation of reasons for this demand proves clearly that it is simply an effort to maintain in this industry a greater number of workers than would be necessary if the production conditions were stabilized. The majority report moves to eliminate the occasional need for these surplus men, freeing them for work in other industries. That purpose is really constructive and has the welfare of workers, operators and consumers at heart. Mr. White's proposal would keep these surplus miners in the industry by paying them for their idle time without regard to the cost to the public.

Consideration of the minority report would be incomplete without examination of its theory of wages. Reduced to clear exposition, Mr. White is not content with an advance to keep pace with a generous estimate of increased living cost; he wants the earnings of the miners increased still more to elevate their position. Here again there is a frank disregard of the interests of labor generally and of the consumer of coal. This is essentially a selfish demand, an advantage to be wrested from fellow laborers in other walks of life. If the common lot of all who toil is to be bettered it can be accomplished not by a mere redistribution of the things now produced. We must have greater production of all the essentials and luxuries of life if more of us are to enjoy them. Shorter hours and higher wages otherwise are only another effort to lift ourselves by our bootstraps.

*Because, in his wage demands, the mine worker showed no sense of obligation to the public, he is told to go back to work at a fixed wage—while the operator is free of legal obligation as regards prices. How long will that liberty be continued if the operator asks an unreasonable price increase? Instead of using the freedom of the market as an opportunity to outvie one another in prices, coal operators should figure on a satisfactory profit and rely on the justice of their cause to prevent a renewed imposition of government control.*



## Coal Replaces Oil In Gas Making

**A**GAIN it is oil vs. coal, and the score is proving to be very large in favor of coal. Two large gas companies have just announced plans for coal-gas installations to replace carburetted water gas, thus replacing anthracite or coke and oil by bituminous coal. And this is only a beginning of the change.

The latest printed U. S. Geological Survey reports on municipal gas supplies give figures for 1915. In that year 550 plants produced 136 billion cubic feet of water gas, using for that purpose more than 550 million gallons of oil and two million tons of coke and anthracite coal. Much of this production will be eliminated in the near future, and coal gas, manufactured with the use of bituminous coal, will be substituted. The reason for this is not difficult to find when one knows the decided upward tendency in price of all petroleum products.

The Washington Gas Light Co. on March 18 announced that it was planning to build a coking plant with a capacity of ten million cubic feet of gas per day in order to permit the substitution of coal gas or coke-oven gas for much of the water gas which is now supplied. This will mean that from one thousand to two thousand tons of bituminous coal will be required per day, according to the processes chosen, or in other words from one-third to two-thirds of a million tons of bituminous coal will annually find a new market in the capital city. The immediate cause of this change was the large increase in price for gas oil, which has advanced from 7½c, a gallon on the last contracts to offerings at over twelve cents a gallon, and some uncertainty as to whether adequate deliveries can be expected. The coking plant thus finds a large advantage which was not previously enjoyed, and bituminous coal comes into its own as a fuel from which the city gas supply will be made.

Another somewhat similar plant was announced a few weeks ago in Chicago by the Koppers Co. of Pittsburgh. This company has made public the plans for building in Chicago a combination coke-oven and water-gas plant, which will be located in the western part of the city, to augment the gas supply of the People's Gas Light and Coke Co., which supplies all of Chicago. In this case, too, it was desired to build only a coke-oven plant; in fact extensive plans were prepared several years ago to this end, but the plans for construction were interrupted by war. Now the situation is such that some water-gas installation must be made immediately in order to increase at an early date the output of gas,

but the coke-oven installation is planned in such a way that great extensions will probably be made later with the idea of ultimately replacing much of the water gas by coke-oven gas. These changes in the city of Chicago represent plans for 12 million cubic feet per day of coke-oven gas, representing about 650 thousand tons of bituminous coal per year.

Similar changes to these two are inevitable in many places if the petroleum market stays as now, and we, therefore, can confidently look forward to changes within the next few years which will mean that perhaps a hundred billion cubic feet of gas now made by water-

gas process will be produced by other means, principally through coke ovens or coal-gas plants. The production of gas in byproduct or retort processes varies from five to ten thousand cubic feet of gas per ton, averaging perhaps seven thousand feet per ton of coal carbonized under the conditions which are indicated by present plans of installation. On such a basis, we can foresee at these plants a prospective additional demand for about twelve to fifteen million tons of bituminous coal.

Byproduct production will be a large factor, too, as eight to ten million tons of coke, 125 thousand to 150 thousand tons of ammonium sulphate or its equivalent in other forms of ammonia, 100 to 120 million gallons of tar, and thirty to forty million gallons of light oils will be entering our markets as the result of such changes.

It behooves the coal man to keep watch on these plans, especially if he is interested in gas or byproduct coals. Big things are on foot and bigger still are to come. It appears more than likely that the invasion of the coal industry by oil will be met by advances by coal on what has come to be regarded as coal territory.

Already it is found impossible to provide the oil that construction of oil-burning ships has made necessary.

*Easy is the assumption of Attorney-General Palmer that Dr. Garfield's war estimates of the cost of producing coal are well warranted in peace time. With steady work and every mine worker doing his utmost the rates fixed during the war, even with the 10c. for steady work deducted, were doubtless enough to provide profits to mines managed with a reasonable degree of efficiency. But with 50 per cent full time, day workers soldiering and miners leaving the mine early, a different condition confronts the industry. An increase in wages of 14 per cent capped the climax and only the sale of contract coal at increased rates made operation possible in all but a very few greatly favored mines.*

### Keep Prices On a Fair Level

BY JOHN H. JONES  
President, Bertha Coal Co.

Present times are so critical that all the business and financial interests of the country should be satisfied with a minimum profit, and coal companies should not advance the selling price of coal more than the actual increase in cost of production over the Government rate in effect in 1918, except in some districts where prices were entirely too low. For certain high grades of coal I would consider a fair price at the present time would be: Fairmont and Pittsburgh steam mine-run and coal of the same quality from other districts, \$3 per ton; gas mine-run 25c. per ton more; or \$3.25. In the Central fields the prices should run from \$3.50 to \$3.75 for thin-vein low-volatile coal.

I realize, in making the above statements, that I shall be criticised by many coal operators who have lost money during the past eighteen months and who insist that they should take advantage of the present opportunity to recoup their losses; but I feel confident that the standard companies owe it to themselves to do all they possibly can to discourage pyramiding of prices at the present time—first, because it is unfair to take advantage of the public at a time like this when there is a great shortage of coal; second, because it is the patriotic duty of every good citizen to help lower the cost of living and to take no advantage of his fellowmen; third, because the coal men are on trial.

Will they rise to the occasion? If they do not the penalty will be a loss of self-respect, a loss of prestige, and they will convince the public of their irresponsibility and will cause great unrest among workingmen in general, who will be compelled to purchase coal at abnormal prices. It will also arouse a spirit of unrest among mine workers, who will feel that they are not getting their share of the price paid. I am heartily in favor of the enactment of legislation permitting the coal operators to agree on a fair price to be charged for coal, subject to the approval of a proper agency for safeguarding the public.



## DISCUSSION *by* READERS

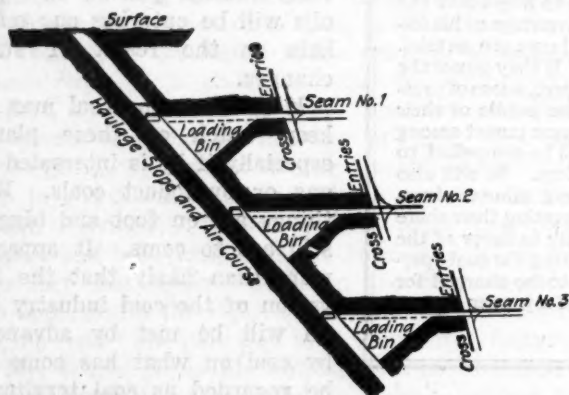
EDITED BY JAMES T. BEARD

### Working Kanawha River Coal

*Letter No. 3*—After an experience of 37 years in the mining of coal, most of which has been at the end of a pick handle, I have been much interested in the question of Arthur L. Sheldon, *Coal Age*, Feb. 26, p. 419, regarding the best method of extracting the coal from three seams underlying the Kanawha River. If the information given is correct, these seams lie at depths of 50, 100 and 160 ft., respectively, below the surface, of Cedar Grove, W. Va. Taking these in the order named, I will assume that No. 1 seam is 3 ft. thick, No. 2 seam, 5 ft., while the thickness of No. 3 seam varies from 6 to 9 ft.

In the first place, having selected a suitable point on the surface, I would drive a steep slope, say a slope having an inclination of 10 or 12 in. per foot of depth, cutting the three seams. The size of the slope must be determined in accordance with the territory to be developed; but I will suppose it to have an area 6 x 12 ft. inside of the timber, which will provide ample room for the installation of a conveyor system should that be deemed advisable, in the later development of the mine.

Where the slope cuts No. 1 seam, I would drive a gangway or level in that seam, for a distance of 100 ft.,



SHOWING STEEP HAULAGE SLOPE AND GANGWAY LEVELS IN THREE SEAMS

before turning off cross-entries. Likewise, where the slope cuts No. 2 seam I would follow the same plan and repeat the operation in No. 3 seam. As I have endeavored to indicate in my sketch submitted herewith, it will then be possible to build large concrete bins, below each level, and arrange these bins so as to load coal into a skip or discharge it into a conveyor in the slope.

It has been my experience, in the working of overlying seams similar to these, better results are always obtained by keeping the extraction of the coal in the upper seam some distance in advance of the working faces below. Thus, in this case, the working face in No. 1 seam should be kept a short distance in advance

of that in No. 2 seam; and the face in No. 2 seam, likewise, a short distance in advance of that in No. 3 seam.

I have found that it is almost impossible to work the coal in an overlying seam when the extraction in a seam lying but a few feet below, is in advance of that in the upper seam. Not only does the caving of the intervening rock strata destroy the roads in the upper seam, but there results no end of trouble in the seam below. For the sake of economy and safety, therefore, I prefer to develop the upper seam in advance of that lying below, in every case.

Speaking of the concrete bins, these should be built by shooting the bottom in each level. Each bin should have a capacity of, say from 50 to 100 tons, or sufficient to fill a railroad car. I would use mules or locomotives to haul the cars to each seam, employing these as the increasing development required.

In the ventilation of the mine, I would make the main slope a downcast and carry the air in two splits, the first split entering No. 2 seam and then circulating through No. 1 seam, before returning to the air-course, which should parallel the slope. The second split is conducted directly to the foot of the slope and made to ventilate No. 3 seam, after which it enters the return air-course and is conducted to the surface. I forgot to mention that, at the inner end of each bin, a cradle dump should be erected provided with a kickback, and the levels laid with double track.

J. B.

Cranberry, W. Va.

*Letter No. 4*—Referring to the inquiry on this subject submitted by Arthur L. Sheldon in the issue of *Coal Age*, Feb. 26, p. 419, I believe that if the pillars are to be drawn and a maximum recovery of coal is expected it will be necessary to work the upper seam first, the middle seam next and the lower seam last. By this I do not mean that it will be necessary to completely exhaust the overlying seam before the next one below is attacked.

The point I wish to emphasize is that the workings of an upper seam should generally be kept in advance of the one next lower. If any ribs are drawn in a lower seam, before an overlying seam is exhausted, care must be taken not to draw any such ribs in the lower seam till the corresponding rib immediately above in the upper seam have been drawn.

The reason is that, with only fifty feet of strata between the two seams, the drawing of ribs in the lower seam will undoubtedly break the strata between it and the upper coal, making the mining of the upper seam difficult, owing to the coal and rock below it being broken and crushed. If two or more seams are worked simultaneously it may be, and probably will be advisable to lay out the entries, in the different seams, one above the other and keep the upper ones ahead.



No pillars should be drawn under the river, unless possibly this might be accomplished with the exercise of due caution, on the wind-up in the lower seam. Only narrow entries, with the roof well supported, should be driven under the river, in the upper seam; and even this should not be attempted, unless there is a good slate or rock strata overlying the coal. Even then, considerable water is liable to find its way into the mine, especially if there are faults or slips extending to the surface or river bed.

#### PROVIDING FOR AN OUTPUT OF 1,000 TONS A DAY

Regarding the kind of opening, I believe a slope opening will be the most economical; and, while the upper seam is being developed, the sinking can be continued down to the next seam. For a mine with a capacity of 1,000 tons per day, I believe it would be more economical to bring the cars to the surface, than to install bins below ground and bring the coal to the surface by means of conveyors, elevators or skips. An installation of that kind would be somewhat expensive for an output of only 1,000 tons a day. However, for a capacity of from 3,000 to 5,000 tons a day, such an equipment, I believe, is well worth considering.

In this connection, let me suggest that, for the production of only 1,000 tons per day, one or at most two seams would be all that would be necessary or advisable to work at one time, and this plan would be more advantageous, as the work could be kept more concentrated, which is always desirable. The lower seam or seams can be developed while the upper ones are being wound up, and a constant output will thus be maintained during the change from one seam to the other.

In regard to the method of working, this would depend largely on the size and shape of the tract to be developed; but, in a general way, I believe that the panel system would be best. In adopting the panel system, the butt or room entries can be driven to the boundary or end of the panel and the rooms turned and the pillars drawn on the retreating plan.

The number of entries to be driven would, again, depend largely on the size and shape of the tract; and the width of entries, rooms and pillars would depend on the amount of cover, roof conditions and hardness of the coal.

EDWARD H. COXE.

Brownsville, Pa.

## Dead-End in Trolley Haulage

*Letter No. 3*—Referring to the question asked in *Coal Age*, Feb. 19, p. 367, regarding the distance that the dead-end of a trolley wire should be located from the face of a heading, my answer is as follows: The trolley wire should never be carried beyond the last breakthrough in the heading, whether gas is generated in the place or not.

There are two reasons, in my mind, why it is not well to extend the trolley line beyond the last breakthrough. In the first place, there is more traveling, back and forth, between the last breakthrough and the face of the heading than anywhere else; and the men engaged in driving the heading are more careless, in passing to and fro, there than they would be if traveling the haulage road.

Hence, it must be admitted that there is every liability of the men coming in contact with the wire if

carried beyond the last breakthrough. Especially in a mine generating gas, the trolley wire should be kept outside of the last breakthrough, because there is more chance of gas accumulating in that portion of the heading and greater danger of the gas being ignited by a flash from the trolley.

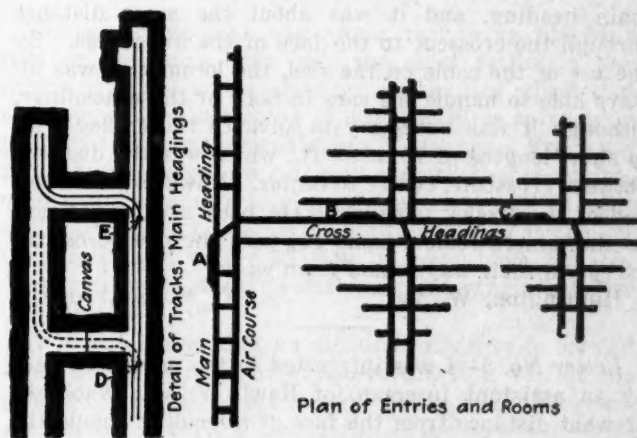
It seems to me that the mining law of Pennsylvania, or one of the other coal states, specifies that the trolley wire must not be extended inside of the last crosscut or breakthrough in the heading. I notice that this inquiry comes from West Virginia, and I am anxious to see what conclusions will be reached and to learn the opinion of others.

MINE ELECTRICIAN.

Conemaugh, Pa.

*Letter No. 4*—In connection with the question of how near to the head of an entry the trolley wire should be carried, it may be of interest to cite a case that I have in mind where the conditions were such as to necessitate carrying the trolley wire closer to the face of the heading than would otherwise have been done. The circumstances were somewhat as follows:

The main headings in a large mine were being driven for development and, at the time of my story, the head of these entries had been advanced about 1,000 ft. beyond the last pair of crossheadings. In the sketch I submit, the general plan of the cross-entries, butt-



headings and rooms is shown on the right; while an enlarged detail plan of the main heading and tracks is shown on the left.

In order to insure the continuous future development and maintain the output of the mine at its usual standard, it was important to drive the main heading and its air-course steadily without intermission. In this mine cable-reel locomotives were used to gather the coal from the rooms on the butt-headings, and haul the cars to the sidetracks marked B and C, in the figure; while a small trolley locomotive was used to haul the cars from these sidetracks to A, and then to the tippie.

The gathering locomotives were kept exceedingly busy as each of them served a large number of men. For this reason, it was found impracticable to take one of these motors and run it a thousand feet up the main heading, to clean up the coal produced at that point. This would have to be done several times during the day and there would necessarily have been much delay and loss of time to the men driving the main headings. The haulage locomotive, on the other hand, had but a short haul and spent considerable time, each day, waiting at the partings for coal.

To obviate these difficulties, it was decided to extend the trolley wire up the main heading and use the haulage locomotive to serve the men driving that pair of headings. At first, the locomotive took the cars only as far as the end of the trolley wire, which I have marked *D* in the sketch; and the two miners, assisted by the motorman and brakeman, switched them by hand and placed them in position for loading at the head of the entry and its air-course. Later, however, owing to adverse grades in the heading, it was found necessary for the motorman to push a train of empties ahead of his locomotive so that the machine could handle the cars to a point nearer the face of the entry.

It is quite evident that this scheme was only a make-shift, and it soon became necessary to adopt a different plan, in order to expedite the work. Referring to the detailed sketch on the left of the figure, the dead-end of the trolley wire was now extended to a point just outby of the last open crosscut, which is marked *E*. As soon as this crosscut was driven through to the air-course, a switch was laid on the main heading and the track carried through the crosscut and extended to the face of the air-course. The old switch and track, indicated by the dotted line in my sketch, was then torn up and a permanent stopping built in that crosscut where a canvas curtain had previously been hung.

By following out this plan, the dead-end of the trolley wire was kept from 80 to 150 ft. from the face of the main heading, and it was about the same distance through the crosscut to the face of the air-course. By the use of the cable on the reel, the locomotive was always able to handle the cars in both of these headings, although it was necessary to advance the trolley wire in short lengths of 70 or 80 ft., which was the distance between crosscuts, center to center. However, the dead-end of the trolley wire was kept back a safe distance, as the miners seldom came out past the open crosscut, except on their way to and from work.

Huntington, W. Va.

C. W. STAFFORD.

*Letter No. 5*—I was interested in the question raised by an assistant foreman, of Rawl, W. Va., who asks at what distance from the face of a heading should the anchor bolt holding the end of the trolley wire be driven. Let me say that the dead-end insulator and pin should never be brought closer to the face than the last open crosscut. No rule can be given expressing the distance, in feet, from this dead-end of a trolley system to the face of the heading, as this will vary, from time to time, with the varying conditions.

One thing is important in extending a trolley wire. Great care should be taken to hang the wire in such a way that it cannot swing or jump sufficiently to reach either the rib or the roof of the entry, since contact of the wire with the natural strata might cause sparking and ignite gas. For this reason, if for no other, a trolley wire should not be extended too close to the face of a heading where gas is being generated.

The suggestion that "the dead-end of the trolley line should not approach closer to the face of the heading than the length of the cable on the locomotive," if carried out, would barely enable the locomotive to reach the load that it must pull from the face of the heading.

Referring to the statement quoted by this correspondent, the meaning intended was that the trolley wire should not be extended, until the distance from the face of the heading was equal to the length of the cable on the machine; or, in other words, until the reach of the machine approached its limit. We are glad to have attention called to this oversight.—EDITOR.

Such a rule is not practical, moreover, since wire extensions would have to be made frequently, and this would necessitate numerous splices and unnecessary expense. My practice is to arrange to hang about 200 ft. of wire at a time, in an entry where the locomotive carries 250 ft. or more of cable.

L. L. NEWMAN.

West Frankfort, Ill.

## Widening an Airway

*Letter No. 1*—Referring to the inquiry in regard to the widening of an airway, *Coal Age*, Jan. 29, p. 245, it may be that the following method of solution will be of interest, as supplementing that already given by the editor, in reply to the inquiry. The question states that there are two airways, each 6 x 8 ft. in section, their lengths being 900 ft. and 3,600 ft., respectively; and it is desired to find the required width of the longer airway that will enable it to pass the same quantity of air as the shorter airway, under the same pressure.

In the following solution, I will call the perimeter and the sectional area of the widened airway, *o* and *a*, respectively, and write the original equation given by the inquirer thus:

$$\frac{2(6 + 8)900}{48^3} = \frac{3,600 o}{a^3} \quad 1.$$

$$\text{and} \quad a = 25.092 \sqrt[3]{o} \quad 2.$$

Then, since the height of the airway to be widened is 6 ft. and calling the required width *w*, we have  $w = a/6$ , which gives for the perimeter of the widened airway,

$$o = 2(6 + a/6) = 12 + a/3 \quad 3.$$

Combining equations 2 and 3 and solving with respect to *o*, we have for the perimeter of the widened airway,

$$o = 12 + 8.364 \sqrt[3]{o}$$

$$\text{and} \quad o - 8.364 \sqrt[3]{o} = 12 \quad 4.$$

Observing Equation 4, it is possible to find quickly the value of the perimeter (*o*) that will satisfy Equation 4, by referring to a table of cube roots and solving by trial. It is also evident that the perimeter of the widened airway must be greater than 28, which is the original perimeter.

To find the value of *o*, by trial, first assume  $o = 38$ . Then, since  $\sqrt[3]{38} = 3.362$ , we have  $38 - 8.364 \times 3.362 = 9.88$ .

This value being too small, try  $o = 41$ ; and, since  $\sqrt[3]{41} = 3.448$ , we have  $41 - 8.364 \times 3.448 = 12.16$ .

Finally, this value being but a trifle too large, the exact perimeter is then ascertained by interpolation:

$$41 - \frac{16}{1216 - 988} (41 - 38) = 40.8 \text{ ft.}$$

Hence, for the required width of the airway, we have

$$w = \frac{1}{6}(40.8) - 6 = 14.4 \text{ ft.}$$

## Unaccountable Explosion

*Letter No. 2*—Referring to the inquiry of "Superintendent," *Coal Age*, Jan. 22, p. 197, I quite agree with the reply made by the editor, that it is more than probable that the gas in question is marsh gas or methane coming from the floor of the workings.

When gas is generated in this manner, coming from the floor, it diffuses into the air and forms an explosive mixture that would readily be ignited on the open lamps of the men who enter the place.



Of the other mine gases that form explosive mixtures with air, carbon monoxide and hydrogen sulphide, the first could not be present, in sufficient quantity to cause an explosion, without its fatal effect on the men being in evidence. On the other hand, the presence of hydrogen sulphide would at once have been detected by the smell of the gas. This gas being heavier than air, specific gravity, 1.1912, it would naturally accumulate at the floor. But, my opinion is that the explosion was due to marsh gas coming from the floor and diffusing rapidly into the air, as stated previously.

Rawdon. Quebec, Canada.

C. McMANIMAN.

*Letter No. 3*—The instance of a mysterious explosion mentioned in the inquiry that appeared in *Coal Age*, Jan. 22, p. 197, is one that should attract the serious attention of mining men, because of its affording an opportunity for the exchange of views and opinions, which are always a source of education in matters pertaining to scientific mining. Our aim, in this connection, should be to reach a solution that will afford greater protection to human life and property.

In my opinion, it happens too frequently that undue pressure is brought to bear on the underground officials, who are often induced to over-reach their standards of safety in an effort to increase the output of the mine. This pressure comes from higher officials of the company whose occasional and hurried visits to the mines afford them but a meager understanding of the conditions that surround the work in the mine.

#### RELATION OF BUSINESS END TO THE OPERATING END IN THE COAL INDUSTRY

Mining is a *business* as well as a science, and it is evident that these two elements seldom function properly together and their true relationship is too often unknown or wholly disregarded. Successful mining, however, is dependent on the equal consideration of both of these factors, which must be co-ordinated to produce results. The business end concerns itself with the amount and cost of production, and the marketing of the product; while the operations of mining the coal require careful investigation of conditions and the devising of means for the safe and efficient extraction of the coal and its preparation for the market.

While it is true that the requirements of business demand the exercise of the strictest economy, it is also true that there are limits beyond which economy cannot be forced without the sacrifice of efficiency and even safety. The result is that underground officials are often in despair with respect to satisfying both the requirements of business and the mining law. The result is much confusion and loss to the company because of these conflicts and cross-purposes. The evils that must follow in the trail of such mismanagement are: Improper methods of mining, which result in loss of valuable coal areas; disregard for the requirements of the law respecting safety, causing avoidable accidents; and increasing the cost of production.

#### FIXING RESPONSIBILITY FOR MINE EXPLOSIONS

With this preamble defining my position, let me say in respect to the instance cited in the inquiry mentioned, that the aim and value of this discussion will not be advanced by merely stating that the explosion was probably due to gas, coal dust, or oily vapor coming in contact with an open light, as this is common knowledge.

While the reference to these factors is well, it will generally be more profitable to consider those agencies and influences that are indeed really responsible for the creation of unsafe conditions in the mine.

It serves no useful purpose to under-rate the ability or condemn the laxity of any mine official. That has been the prevailing custom in the past, with the result that accidents still happen in spite of this criticism and censure. There is nothing mystifying about mine explosions. The strange thing is that, with our knowledge of conditions existing in mines and which make such occurrences possible, no more effective means are yet used for their prevention. It cannot be denied that the business end is largely responsible for this lack of prevention.

To my mind, there is nothing extraordinary in the case under consideration, as sufficient data are given to enable one to come to a reasonable conclusion as to what caused this accident. We know that carbon and oxygen are the elements that unite with explosive violence, under certain conditions and in the presence of an open light. The carbon is a constituent of marsh gas, coal dust and oily vapor, all of which were present in varying quantities, while the oxygen of the air made their combustion possible and an explosion took place when the loader went to the face with his carbide light.

#### VAPORIZED OIL A CONTRIBUTING FACTOR

The suspicion that oily vapor may have played a part or even may have been the chief factor in this explosion is not amiss, although authorities affirm that oil seepage does not occur in coal measures to such an extent as to cause apprehension of danger. From our present knowledge, we can only remark that vaporized oil may yet be shown to play an important part in mine explosions, since crude oil is said to vaporize at the low temperature of 60 or 65 deg. F., and have a vapor density of 0.855, while its flashing point ranges between 200 and 400 deg. F.

It is also stated that an explosive mixture is formed when the proportion of vapor to air is 2 vol. of the former to 100 vol. of the latter. These data, if correct, are worthy of careful consideration in connection with mine explosions. The presence of oily vapor, in mine air, has the effect of rendering explosive, mixtures of gas or dust that would not otherwise be dangerous.

In the instance cited, pillars were being cut with machines; the air current had little velocity, which is very probable in a working place under these conditions. Little gas had been found previously, or at least reported, as carbide or open lights were in use in the mine. A cave had occurred in the gob after the fire-boss had examined the place two hours before and reported it as "free from gas."

In considering these facts, we know that it is possible for unsafe conditions to have developed, in this place, within a short space of time; besides, much gas may have been released by the roof fall in the gob. As a result of this fall, the fine dust of the machines would be blown into the air by the concussion, and it is possible that this cloud of dust was ignited, even in the absence of any gas. The ignition of dust is dependent on the inflammability of the coal, the fineness of the dust and its free suspension in the air. My conclusion is, therefore, that these conditions made possible this explosion and there is nothing mysterious.

Ladysmith, B. C., Canada.

WILLIAM WESNEDGE.



## INQUIRIES OF GENERAL INTEREST

ANSWERED BY JAMES T. BEARD



### The Water Gage and an Open Door

In discussing the question of finding a mine door set open, *Coal Age*, Jan. 22, p. 196, John H. Wiley has questioned my previous statement that a fireboss can often detect an open door in the mine, by the reading of the water gage. In order to decide this question once and for all, I want to ask *Coal Age* to answer the following questions:

Suppose the air current in a slope has a velocity of 600 f.p.m. when traveling 5,000 ft. down the slope to the face and returning the same distance up the slope to the fan, which is exhausting. If both the intake and the return airways, in this case, are 6 x 10 ft. in section, I want to ask: 1. What should be the water gage reading when the air is circulating the entire length of the slope? 2. Assuming a door is set open between the main slope and the return air-course, at a point 2,000 ft. down from the mouth of the slope, so that the air is short-circuited at this point, what should then be the water-gage reading? 3. What effect would the short-circuiting of the air have on the speed of the fan?

My contention is that the resistance of the mine is determined by the size and length of the airways through which the air is circulated, and this resistance determines the pressure and the water gage, but not the speed of the fan. Assuming the power applied to the fan shaft remains constant, my belief is that the fan will run at a constant speed and produce a certain velocity in the airways, depending on their size and length, and the resistance set up will develop a certain water gage.

Now when this current is short-circuited, the velocity of the air will, of course, be increased; but, even so, the mine resistance will be decreased, because the rubbing surface is made much less by the short-circuiting of the air current. As a result, there is a drop in the water gage, which indicates the short-circuiting of the air. Let me ask, of what benefit is the water gage to the fireboss if this is not true?

Farr, Colo.

ROBERT A. MARSHALL.

Replying to these questions in the order asked, we answer as follows:

1. The water gage produced by a velocity of 600 f.p.m., in an airway 6 x 10 ft., 10,000 ft. long, using the Fairley coefficient ( $k = 0.00000001$ ) is

$$w.g. = \frac{k l v^3}{5.2 a} = \frac{0.00000001 \times 10,000 \times 32 \times 600^3}{5.2 \times 60} = 3.7 \text{ in.}$$

2. Neglecting a slight change in the efficiency of the fan and assuming that the power on the air remains constant when the current is short-circuited at the door, 2,000 ft. from the mouth of the slope, we observe from the formula for water gage that, since the unit

resistance ( $k$ ), perimeter ( $o$ ) and sectional area ( $a$ ) are constant, the water gage varies directly as the length of the airway, and the square of the velocity of the current, or as  $lv^2$ . When the air is short-circuited the length of the airway is reduced to two-fifths of the original length; but it is still necessary to find how much the velocity is increased by thus shortening the distance the air must travel, assuming the power on the air remains constant. To do this, first write the formula for power on the air ( $u$ ) expressed in terms of the airway, length ( $l$ ) and perimeter ( $o$ ), and the velocity ( $v$ ) of the current: thus,

$$u = k l o v^3$$

Regarding this formula it appears that, for a constant power on the air,  $k$  and  $o$  being constant,  $v^3$  varies inversely as  $l$ ; and therefore the velocity, in this case, varies inversely as the cube root of the length. In other words, the velocity ratio is equal to the cube root of the inverse ratio of the length of the airway. Calling the original velocity  $v$ , for a length 5, and finding the velocity  $x$ , for a length 2, we have

$$\frac{x}{v} = \sqrt[3]{\frac{5}{2}} = \sqrt[3]{2.5} = 1.357$$

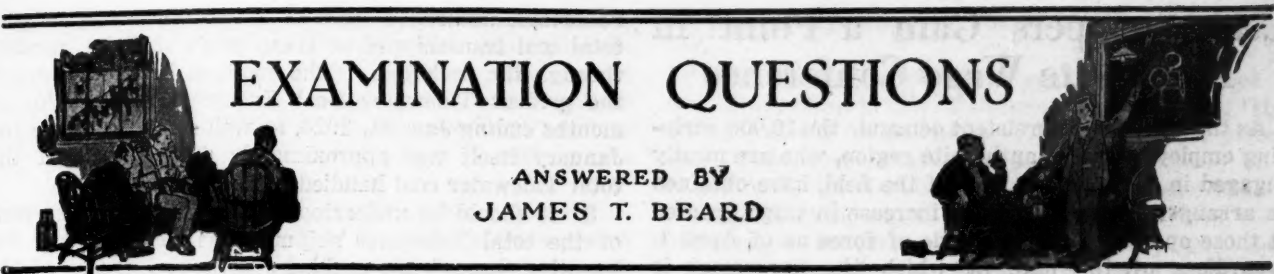
That is to say, shortening the length of the airway to  $\frac{2}{5}$  of its original length will increase the velocity 1.357 times; and, since the water gage varies as  $lv^2$ , we have for the increased gage,

$$3.7 \times \frac{2}{5} \times 1.357^2 = 2.7 \text{ in.}$$

Therefore the short-circuiting of the air, in this case, whereby the rubbing surface was reduced to two-fifths of the original amount, causes a drop of water gage  $3.7 - 2.7 = 1$  in. It should be observed, however, that the setting open of a door back in the workings and controlling but a comparatively small split of air in respect to the entire circulation in the mine would often have but slight effect to lower the water gage in the fan drift. The effect produced on the water-gage reading in the fan drift by the setting open of a door will depend on the amount the distance of air travel is shortened by the short-circuiting of the current, assuming, of course, that the size of all the airways is the same. In that case, the power on the air remaining constant, the unit pressure or water gage will vary as the cube root of the length of the airways.

3. As has frequently been stated in *Coal Age*, the short-circuiting of the air current producing any considerable drop in the water gage would be accompanied with a corresponding increase in the volume of air in circulation, the power remaining constant. The increased volume of air flowing through the fan increases the resistance of the ventilator and a larger proportion of the power is absorbed within the fan itself, which reduces the power available for turning the machine, and the fan runs slower as a result.





## EXAMINATION QUESTIONS

ANSWERED BY  
JAMES T. BEARD

### Miscellaneous Questions

(Answered by Request)

**Ques.**—What effect does the presence of carbon dioxide have on a firedamp mixture?

**Ans.**—Carbon dioxide is an extinctive gas, owing to the fact that it contains no available oxygen to support combustion. On this account, its presence in a firedamp mixture not only dilutes the mixture so as to reduce the percentage of methane present, but the mixture is rendered less explosive by its presence. When a firedamp mixture at its most explosive point contains one-seventh of its volume of carbon dioxide, the presence of the latter gas renders the mixture nonexplosive.

**Ques.**—What is the range of explosive mixtures of air and methane?

**Ans.**—The lower explosive limit of pure methane and air is reached when the proportion of gas to air is 1 : 13. The percentage of gas present, at this point, is  $100 \div (1 + 13) = 7.14$  per cent. The higher explosive limit of pure methane and air may be taken as indicated by a proportion of gas to air 1 : 5. At this point, the percentage of gas present is  $100 \div (1 + 5) = 16\frac{2}{3}$  per cent.

**Ques.**—A tank that is full of water measures 8 ft. in diameter at the top, 12 ft. at the bottom and is 12 ft. deep. How many pounds of coal will it take to evaporate this water into steam at 70 lb. gage pressure?

**Ans.**—This tank being a frustum of a cone, its volume is calculated as follows, calling  $h$  the height and  $D$  and  $d$  the respective diameters of the tank:

$$\text{Vol.} = 0.2618 h \frac{D^3 - d^3}{D - d} = 0.2618 \times 12 \frac{12^3 - 8^3}{12 - 8} = 955 \text{ cu.ft.}$$

The weight of water in the tank is then  $955 \times 62.5$  = say 59,690 lb. With a fair coal and boiler, it is customary to estimate on a consumption of  $4\frac{1}{2}$  lb. of coal, per horsepower, per hour. But, taking the equivalent of 1 boiler-horsepower as the evaporation of 34.5 lb. of water, per hour, from and at 212 deg. F., it may be assumed that 1 lb. of coal, under fair conditions, will evaporate  $34.5 \div 4\frac{1}{2} = 7\frac{2}{3}$  lb. of water, per hour, from and at 212 deg. F.

At sea level, a gage pressure of 70 lb. corresponds to an absolute pressure of, say 85 lb. per sq.in. Referring to steam tables, the total heat above 32 deg. F., in steam generated at this pressure is 1,183.4 B.t.u. Now, assuming the water in the tank has a temperature of, say 60 deg. F., the heat required to convert this water into steam at 70 lb. gage, at sea level, is  $1,183.4 + 32 - 60 = 1,155.4$  B.t.u. Again, the heat above 32 deg. F., in steam generated from and at 212 deg. F., is 970.4 B.t.u., which makes the factor of evaporation in this case  $1,155.4 \div 970.4 = 1.1906$ .

Now, if 1 lb. of coal will evaporate  $7\frac{2}{3}$  lb. of water into steam, from and at 212 deg. F., the same pound

of coal will evaporate  $7\frac{2}{3} \div 1.1906 = 6.44$  lb. of water, from a temperature of 60 deg. F. to steam at 70 lb. gage, at sea level.

Under the assumed conditions, therefore, the weight of coal required to evaporate the water in this tank would be  $59,690 \div 6.44 = 9,270$  lb., or, say 4.6 tons.

**Ques.**—Give the force of a blownout shot when 8 lb. of powder made up the charge. Assume that 6 lb. of the powder expanded on the air current when the shot was fired at a point in the intake 4,500 ft. from the fan. The size of the intake is 8 x 10 ft., in section, and the velocity of the air current 700 ft. per min.; temperature, 60 deg. F.; barometer, 30 in.

**Ans.**—This question cannot be answered from a practical standpoint and possesses no value, either theoretical or practical.

**Ques.**—Give the size and kind of engine required to hoist 2,000 tons of coal up a shaft 600 ft. deep, in 8 hr. The weight of the empty car is 1,200 lb. and its capacity, 4,500 lb. of coal. The size of the rope is  $1\frac{1}{2}$  in.

**Ans.**—Since a 1-in. rope weighs 1.58 lb. per lineal foot, the weight of a  $1\frac{1}{2}$ -in. wire rope is  $1.58 (1\frac{1}{2})^2 = 2.45$  lb. per ft. The weight of rope hanging in the shaft is, therefore,  $600 \times 2.45 = 1,470$  lb. Then, assuming a double hoist in which the weight of the cages and cars balance, the unbalanced load on the engine is as follows: coal, 4,500 lb.; rope, 1,470; or, say a total of 6,000 lb. Adding  $\frac{1}{4}$  for friction gives for the total load, in a single hoist, 6,600 lb.

The rate of hoisting, for an output of 2,000 tons in 8 hr., is  $(2,000 \times 2,000) \div (8 \times 4,500) = 111 +$  hoists per hr. Making due allowance for unavoidable delays, we will estimate on 120 hoists per hr. or two hoists a minute, making the time 30 sec. per hoist. Now, taking the average speed of hoisting as 25 ft. per sec., for the entire depth of the shaft, gives  $600 \div 25 = 24$  sec., which allows 6 sec., per hoist, for dumping or changing cars and accelerating the speed.

Assuming an efficiency of 80 per cent, the horsepower of the engine required for this service is

$$H = \frac{6,000 \times 25 \times 60}{0.80 \times 33,000} = \text{say } 340 \text{ hp.}$$

In order to determine the size of engine that will develop this horsepower, we will assume that the mean effective steam pressure ( $p$ ) in the cylinder is, say 60 lb. per sq.in.; the ratio of stroke ( $r$ ) to diameter of cylinder, ( $d$ ) 1.2; and the number of strokes ( $n$ ), per minute, 300. The diameter of this cylinder, in inches, is then calculated by the formula,

$$d = 80 \sqrt{\frac{H}{p r n}} = 80 \sqrt{\frac{340}{60 \times 1.2 \times 300}} = 20 \text{ in.}$$

The length of the stroke of this engine is  $20 \times 1.2 = 24$  in. The size of this duplex engine is calculated on the basis of the entire power being developed in one cylinder, which is safe practice in hoisting calculations.

## Coal Strippers Gain a Point in Anthracite Wage Conference

As the outcome of persistent demand, the 10,000 stripping employees in the anthracite region, who are mostly engaged in the southern part of the field, have obtained an arrangement by which any increase in wage granted at those operations will be made of force as of April 1, regardless of the date at which the agreement is reached. This concession was granted during a session of two hours' duration on the first day of the fourth week of the conference and it was the only advance toward a settlement which that week had to announce.

The resolution adopted by the sub-committee on March 30 at the Union League Club, New York City, read as follows:

"Resolved, that the resolution adopted by this committee on March 24, providing that any agreement reached here be made retroactive to April 1, 1920, be construed to include the employees of stripping contractors."

## Railroads Advocate Successor to Tidewater Coal Exchange

**Railroads Propose to Carry Half the Burden—Sixty Per Cent of Coal Transshipped to Go Through Exchange—No Increase in Number of Pools**

ABOUT one hundred shippers of bituminous coal and representatives of various railroads attended the meeting held at the Bellevue-Stratford Hotel, Philadelphia, on March 31 to consider the action to be taken as to the pooling of Tidewater bituminous coal upon the withdrawal of the Tidewater Coal Exchange on April 30.

The meeting was held in pursuance of a resolution adopted at a meeting of the principal Tidewater bituminous coal railroads using the ports of Baltimore, Philadelphia and New York, and was presided over by G. N. Snider, chairman for the railroads, who is also coal freight agent for the New York Central and Hudson River R. R.

Elisha Lee, of the Pennsylvania R. R., spoke at length on the proposition of continuing the pooling arrangement, after which there was a general discussion.

It was finally decided to appoint a Committee of Fifteen which is to meet with a committee representing the railroads to discuss plans and arrangements for continuing the work now being performed by the Tidewater Coal Exchange. This committee will consider the plans already mapped out for the organization of the Tidewater Transshippers Association, Inc., of New York City. In its plan the committee will also incorporate the following propositions submitted by the railroad representatives:

1. That the railroads propose to the shippers and transshippers of coal through the ports of Baltimore, Philadelphia and New York to pro-rate the expense of conducting a new exchange, if formed, on the basis of 50 per cent chargeable to the railroads and 50 per cent to the exchange.

2. This recommendation is to be conditional upon shippers and transshippers of Tidewater coal giving

reasonable assurances that at least 60 per cent of the total coal transshipped at these ports shall be handled through the exchange. (The tonnage handled through the present Tidewater Coal Exchange during the 10 months ending Jan. 31, 1920, as well as the tonnage for January itself was approximately 60 per cent of the total Tidewater coal handled at these ports.)

3. It should be understood that at least 60 per cent of the total Tidewater shipment will be retained for handling through the exchange without increase of the total number of classifications or pools. It is also recommended that special pools now in existence in favor of certain individuals shall be abolished as soon as possible.

- 4 Supervisory officials in charge of the exchange should be men of railroad experience and acceptable to the railroads.

- 5 The members of the exchange by methods which may seem to them best will, of course, be responsible for the quality and characteristics of coal going into each pool.

6. The railroads shall assume no financial responsibility of any kind except for their agreed proportion of the cost of conducting the operation of the exchange.

## Monongalia County Mines Unionized

Officials of District 17 in northern West Virginia estimate that during the last two weeks of March no less than 1,200 miners were enrolled as members of the United Mine Workers of America at ten different mines on Scott's Run in the Monongalia field, the Scott's Run field, or at least a large part of it, having been heretofore unorganized.

As the field is undergoing rapid development, officials of the U. M. W. expect further large accessions to their ranks from time to time. Mines at which the miners are said to have been organized are the Davis Coal Co., Liberty Coal Co., Berry Coal Co., Agreement Fuel Co., Soper & Mitchell, Anchor Coal Co., South Penn Coal Co., Scott Run No. 1, Randall Coal Co. and Elkins & Stone.

## Daily Versus Annual Wage

**Anthracite Mine Workers Want 18.7 Per Cent Greater Increase Than Bituminous Mine Workers**

WHEN the bituminous mine workers met their employers, they talked about the importance of adequate *annual* wages. What was to be gained, they said, from a large *daily* earning, if the industry was to be continually faced with short time and the incomes of the mine workers were to be fritted away by idle days? Now the anthracite mine workers meet the anthracite operators and talk day wage, saying that for so much work they are entitled to so much pay. It shows that until the bituminous coal field works as steadily as the anthracite there will be continued trouble. First the bituminous mine workers will ask a wage large enough to enable them to live during idle days and hours, and then the anthracite mine workers will want equal daily pay for their steady time.

At the session of March 31 the mine workers pre-



sented a comparison of the earnings of anthracite and bituminous mine workers. Figures were offered by the operators upon the same subject, and the whole matter was discussed. So far, it is stated, there has been no discussion on the closed shop, the check-off and the shorter work day, all of which form a part of the demands.

At the session held on Thursday, April 1, the agreement signed on the previous day by the bituminous miners and operators was discussed, and it was said, unofficially, that the wage clauses of the new bituminous wage agreement were read into the records. The mine workers' representatives regarded this as additional evidence—surely there is enough without it—that the anthracite operators intend to argue strongly against the mine workers' demand for a wage increase that will be 18.7 per cent higher than the bituminous mine workers have just secured.

The official statement issued at the conclusion of the session did not say anything about the bituminous agreement, simply reading:

"The operators presented arguments and figures answering the statistics presented by the miners last week, which statistics had reference to the increase in the cost of living as compared with the increase in rates and wages in the anthracite and bituminous regions from 1916 to 1920."

John L. Lewis, international vice president of the union, has announced that, now he has completed the negotiations with the bituminous operators, he will devote his time to the sessions of the sub-committee until an agreement is signed.

The sub-committee adjourned from April 1 until April 5, most of the members going to their homes over Easter Sunday.

The sub-committee resumed conferences at the Union League Club on the afternoon of April 5. While no official statement was forthcoming it is known that some of the miners' officials express the opinion that an agreement will be reached within the next two weeks.

The official statement given out at the conclusion of the session read:

"The sub-committee of anthracite operators and miners met today and resumed consideration of the demands of the anthracite mine workers. The operators made their reply to the demands of the mine workers for a standardization of the rates paid to men in various occupations and presented their argument in refutation of certain data based upon statistics of the Pennsylvania Compensation Commission that had been presented to the committee by the representatives of the mine workers."

## Palmer May Again Indict Coal Men

### Declares Price Rise Should Not Exceed Wage Rise and Perhaps Should Not Be Over 20c per Ton

FEDERAL district attorneys were instructed by Attorney General Palmer on April 3 to receive and consider complaints of profiteering in bituminous coal "which may arise in your district under the Lever act."

Mr. Palmer's telegram was prepared after some bituminous coal operators had stated publicly that the new wage scale agreed on under the terms of the award by the coal strike settlement commission would result in

an increase of from 60c. to \$2 a ton on bituminous coal.

"Now that the government regulation of prices has been discontinued," Mr. Palmer's message reads, "there are indications of an excessive increase in the price of bituminous coal. Our total annual production is approximately 500,000,000 tons. It is estimated that the total increase in wages (to mine workers) will be approximately \$200,000,000 per annum. If this entire amount is added by the operators to the price, it would only make an increase of 40c. per ton.

"If however, the operators absorb the 14 per cent increase which became effective in December, there will be left only \$96,000,000 to be passed on to the consumer. In this event, the increase in the price of coal at the mine would amount to 26c. a ton.

"I understand that an exaggerated estimate of the demand for export coal is affecting the market price, particularly from Illinois east, this demand having been estimated at as much as 100,000,000 tons. But I am advised that our port facilities are only adequate for the export of 30,000,000 tons per annum—that is to say, only 6 per cent of our total production.

"This should not be made an excuse for raising the price for domestic consumption. It is probable that normal conditions will be shortly restored and fair prices will follow.

"In the meantime, please receive and consider complaints of profiteering which may arise in your district under the Lever act."

## Strikes Against Wage Decision

### Mine Workers Strike for More Favorable Contract in Kansas, Southern Illinois and Eastern Ohio

KANSAS mine workers are always first to strike and it is hardly surprising to read that on April 5 two thousand of them went on strike despite the fact that the state invoked the powers of the new Court of Industrial Relations and that subpoenas prepared by Attorney-General Hopkins summoned the presidents of all the local unions of the United Mine Workers of America to appear in court, April 6. Judge W. L. Hugins presides over the court which is empowered to deal with all industrial controversies, to issue orders, and which, when any strikes endanger public health or welfare, may take over the industry involved.

The mine workers oppose the day-wage provisions and the deadwork allowances as being inadequate and are opposed to automatic penalties, higher supply costs and the working conditions provided. Alexander Howat, the president of the district union, declared some time ago that there would be a strike on April 1 regardless of the industrial-court law.

Not being pleased with the wage increases granted by the Bituminous Coal Commission, 400 Columbiana County mine workers in northeastern Ohio refused to go to work on April 2. Three mines were crippled in consequence. Two hundred Tuscarawas County mine workers, also discontented with the decision, suspended work on the same day. In eastern Ohio also 3,000 coal mine workers struck, April 2, despite the efforts of union leaders.

In southern Illinois the company men are discontent and at twenty mines have discontinued work, the \$1 per day increase not being satisfactory to them.

# Oil, Being Already in Short Supply, Cannot Displace Coal

Shipping Board and Navy Cannot Secure Enough Oil—Prices Offered Three Times As High As a Year Ago—May Commandeer Oil and Demand Oil As Royalty

BY J. H. DODGE\*  
Washington, D. C.

**F**UEL oil will not be available in sufficient quantities and at prices economical enough to warrant industrial plants now employing coal as a principal fuel to convert to an oil-burning system. This is the conclusion reached following an investigation of the subject made by the Federal Trade Information Service at the behest of the owners of a plant contemplating the conversion of a coal-burning plant into an oil-burning one, should the prospects prove favorable. Probably the most striking single expression on the subject from an authoritative source is that of Dr. George Otis Smith, Director of the Geological Survey, who says: "Personally, I do not believe a barrel of fuel oil should be burned where coal is available and will serve the same purpose." This opinion seems to be concurred in by practically every person qualified to express an opinion, not excepting some of the large companies directly engaged in the oil industry.

In the course of its inquiry, the Federal Trade Information Service sought advice from one of the largest producing companies in the country. This company, though reputed to be dominant in the oil field and to be seeking business, reported that the fuel-oil situation is such that it does not feel itself to be in a position to take on new obligations for fuel oil. Other oil companies are in the same position, as evidenced by the difficulty of the Shipping Board and the Navy in obtaining bids on their requirements. Neither of these agencies has been able to attract bids for quantities large enough to cover their needs and those tenders made are at prices about three times former prices.

There is much talk of Government commandeering of oil supplies in order to obtain sufficient oil for the Shipping Board and the Navy. The Department of the Interior in drawing the regulations under the oil-lands leasing bill is to avail itself of the option to take the Government royalties in oil rather than in cash.

Another large oil company—a refining concern—approached, reported: "That, since at the present time, due to a combination of circumstances, there is really a world shortage of available petroleum, we do not feel that it is the right time for any one to change from coal to oil consumption for steam-making purposes."

Perhaps the expressions of the companies which normally would be eager for new markets for their products are even more convincing than the reports of Government agencies on the subject, but the Government experts are by no means lukewarm in their opinions as to the advisability of abandoning coal for fuel oil.

\*Secretary, Federal Trade Information Service.

**Oil companies refuse to take on new obligations in view of oil shortage. Fuel oil is only a third as efficient as coal when price is considered. Oil saves, however, in transportation and storage. Great Britain and Holland are getting oil control. Domestic supplies are found to be unequal to home needs.**

"It should be realized," says the Geological Survey, "that for a number of years the domestic production of petroleum has been insufficient for the demands, and importations, chiefly from Mexico, have steadily increased since 1912. In 1919 imports of crude oil into the United States amounted to more than 52,000,000

barrels. The obtaining of sufficient supplies of fuel oil to meet future demands for the Navy, the merchant marine and for general industrial use is causing much concern." Students of the situation from the engineering point of view believe that at prevailing prices coal is the more economical fuel. Ex-

periments with the two fuels at prevailing prices result in reported conclusions that fuel costs about three times as much as coal for the same efficiency. While oil has some advantages from the point of view of transportation and storage, still its fugitive quality and its susceptibility to accidental destruction by fire is such that they nearly balance the advantages.

## OUTLOOK FOR FUTURE OIL PRODUCTION

Opinions differ as to the probability of enlarged oil production. Some scientists believe we are approaching maximum production while others feel that the stores of petroleum are practically unlimited. The appearance of salt water in so many Mexican wells and also in many in this country, has been a discouraging element. On the other hand, new and improved methods of production and handling and, above all, improved measures for the prevention of waste, an item which in the past has been stupendous, have bettered the outlook.

One source of alarm to oil men and consumers is the circumstance that oil reserves apparently are getting out of American control. Foreign countries—principally Great Britain and Holland—have cornered vast reserve supplies of oil in all parts of the world, whereas the United States has scarcely made a move to obtain preference anywhere.

The seriousness of the situation has been pointed out by the Navy Department, the Geological Survey, the Bureau of Mines and other well informed agencies.

Upon all these questions turns the advisability of the adoption by American industry of fuel oil in place of coal. Vastly increased oil production and the gaining of control over extensive petroleum reserves might very conceivably bring the price of fuel oil down to a point where it would prove more economical than coal, but the best information available is that coal, rather than fuel oil, today is the most available industrial fuel and is likely to remain so for some time.



# Central Competitive Field Makes New Basic Agreement

**Operators, Afraid to Meet Mine Workers for Fear of Conviction Under Lever and Sherman Acts, Are Reassured by Assistant Attorney-General Ames—Make Basic Agreement in Accord with Majority Report of Bituminous Coal Commission.**

**R**APID progress was made in the negotiations between the bituminous mine operators and workers when they resumed their conference at the Waldorf-Astoria Hotel on the morning of March 30. Before meeting to take action that might involve them in an indictment similar to that just filed against 123 operators and miners in Indianapolis, the operators wanted to receive, through their Attorney, Ralph Crews, of 55 Wall St., New York City, a letter from the Department of Justice, which came from the pen of Judge C. B. Ames, Assistant Attorney General. He assured them that it would not be a violation of the law for the operators and miners to make the contract which was recommended by President Wilson's commission. The letter, dated March 27, read as follows:

"You advise me that pursuant to the request of the President, representatives of the bituminous-coal operators and miners are to meet next Monday for the purpose of negotiating a new wage agreement, pursuant to recommendations by the U. S. Bituminous Coal Commission submitted to the President on March 10, 1920. You further advise me that because of the indictment which has been returned by a grand jury to the U. S. District Court for the district of Indiana, a question has been raised by some of the parties concerned as to whether such an agreement as has been recommended by the commission would be regarded by the Department of Justice as a violation of the law.

"While the Department of Justice is not authorized by law to give advice to private citizens, under all the circumstances I think it is proper for me to authorize you to say to the representatives of the miners and operators that the department does not think it would be a violation of law for the miners and operators to make the contract recommended by the U. S. Bituminous Coal Commission."

The sub-committee, after hearing the letter read to them, held a short session Tuesday morning, and it was decided to appoint a committee of two to draw up a tentative contract to be presented to the full sub-committee at 10 a.m. on the morning of March 31. This special committee was composed of P. H. Penna, of Indiana, representing the operators, and William D. Green, secretary-treasurer of the United Mine Workers, representing the mine workers.

The committee devoted the entire afternoon to the

consideration of a tentative agreement, and late at night it announced it was prepared to make its report to the full sub-committee when it convened the next morning.

Operators attending the conference declared that the increase in wage granted the workers by the President's commission would mean an increase of from \$1

to \$1.25 per ton in the price of bituminous coal at the mine, with the exception of Illinois coal, where, due to local conditions, which lessen the cost of production, the advance will not be more than 65c. at the mine.

The telegrams sent by President Lewis of the United Mine Workers of America to more than 3,000 locals notifying them of the action of the

conference in putting into effect as of April 1 the increase of 27 per cent granted by the majority report of the Bituminous Coal Commission, and instructing the men to remain at work after April 1, cost the union between \$4,000 and \$5,000.

## OPERATORS AND MINERS SIGN AGREEMENT

After considering the report of the special committee appointed to prepare the tentative agreement, the sub-committee accepted it, and it was immediately signed by the International representatives of the mine workers and by two operators and two miners from each of these states—Indiana, Ohio, Illinois and Pennsylvania.

At the conclusion of the conference shortly after 5 p.m. on March 31, a copy of the agreement was made public. It follows:

"Pursuant to instructions of the President of the United States, as communicated to Thomas T. Brewster, chairman of the Coal Operators' Scale Committee of the Central Competitive Field, and John L. Lewis, president of the United Mine Workers of America, in a letter dated March 19, 1920, and which in part reads as follows:

"I am transmitting to you herewith a copy of the report and award of the Bituminous Coal Commission appointed to adjust matters in the controversy between the bituminous-coal miners and operators of the country.

"In accordance with instructions in my letter of appointment to the commission and memoranda attached thereto and the agreements by mine workers and operators to abide by the report and award of the commission, this report and award is the basis upon which

Becoming afraid that the joint agreements advocated by the President and urged on the operators in certain sections of the country by Government officials are of doubtful validity, and subject those taking part in them to fine and imprisonment, the Central Competitive operators insist before meeting with the mine workers and accepting the Government's proposals that they be assured that there is no prosecution in contemplation.

the wage-schedule agreements between the mine workers and operators shall be made.

"Operators and miners should, therefore, make arrangements for convening the necessary joint conferences as soon as possible to make such change in the terms, provisions and conditions, mining rates and wage schedules as are set forth in this report and award."

"We hereby agree:

"First—All coal shall be weighed and paid for on a mine-run basis, except that the Block Coal District of Indiana shall continue upon the present screen coal basis and that the usual methods of applying tonnage rates shall continue.

#### NEW PICK-MINING RATES

"Second—The pick-mining rate in the thin-vein district of western Pennsylvania and in the eastern Ohio, Hocking, Cambridge and Amsterdam-Bergholz districts of Ohio shall be \$1.1164, and throughout the balance of Ohio the pick-mining rate shall be advanced 24c. per ton upon the pick-mining rate in effect Oct. 31, 1919; in the bituminous district of Indiana \$1.08 per ton, and in the Danville district of Illinois \$1.08 per ton.

"Third—The machine-mining rate in the thin-vein district of western Pennsylvania shall be 94c. per ton; in Ohio, 94c. per ton; in the bituminous district of Indiana, the chain-machine mining rate shall be 96c. per ton and the punching-machine rate 98c. per ton; in the Danville District of Illinois 98c. per ton.

"Fourth—That all day laborers and monthly men (the advance to monthly men to be based on an average of the usual number of days he is required to work in a month), except trappers and other boys, be advanced \$1 per day. Trappers and boys receiving less than men's wages to be advanced 53c. per day.

"Fifth—Dead work, yardage and room turning is advanced 20 per cent on the prices being paid Oct. 31, 1919.

#### DEFINITION OF A DAY'S WORK

"Sixth—That the eight-hour day in effect Oct. 31, 1919, shall continue. An eight-hour day means eight hours' work in the mines at usual working places for all classes of inside day labor. This shall be exclusive of the time required in reaching such working places in the morning and departing from the same at night.

"Drivers shall take their mules to and from stables, and the time occupied in so doing shall not be included as any part of the day's labor, the work of drivers beginning when they reach the change at which they receive empty cars, but in no case shall the driver's time be docked while he is waiting for such cars at the point named

"When the men go into the mine in the morning they shall be entitled to two hours' pay, regardless of whether the mine works the full two hours. But after the first two hours the men shall be paid for every hour thereafter by the hour, for each hour's work or fractional part thereof. If for any reason the regular routine work cannot be furnished the inside labor for a portion of the first two hours the operators may furnish other than the regular labor for the unexpired time.

"Seventh—All internal differences are hereby referred to the various districts for settlement, with the understanding that only by mutual consent shall anything be done in sub-district, district or wage-scale conventions that will increase the cost of production or decrease the earning capacity of the men. All rules now incor-

porated in existing contracts shall remain in force until changed by agreement between operators' and miners' representatives.

"Eighth—The practice of voluntarily paying more than the contract price, either by bonuses or otherwise, which is done ordinarily for the purpose of enticing employees from other mines, and thereby creating discord and disorder in the coal industry, is condemned. It will therefore be assumed in future joint conferences convened for scale-making purposes that all bonuses or advances in excess of wages provided in the contract were paid because of physical conditions in or around mines where such methods are practised, and the wages so paid shall be considered the base price for such mines, all on the wage scales in effect Oct. 31, 1919.

"Ninth—Whereas stoppage of work in violation of the agreement has become so serious as to menace the success and perpetuity of the United Mine Workers of America and our joint relations, this conference instructs the respective district executive boards to meet the operators in their various districts for the purpose of agreeing on a penalty clause where none now exists, and if necessary to meet also to amend and strengthen existing clauses so as to make the penalty more effective in preventing strikes and violations of agreements.

#### PENALTY IMPOSED FOR FAILURE TO COLLECT FINES

"All fines provided for in all agreements shall be automatically collected, and any operator failing to collect and forward to proper parties such fine shall pay a penalty of \$2 for each employee subject to be fined, the same to be collected and retained in the miners' district organization. And in no case shall any fine be refunded except by mutual agreement of the accredited representatives of the operators and miners.

"It is further agreed that where any employee enters suit in the civil courts to recover any fine collected in accordance herewith the district organization shall reimburse the operator for expense incurred on account of such suit.

"Tenth—That the fulfillment of this agreement is guaranteed by the international union, and the fulfillment of joint agreements entered into in any district shall also be guaranteed by the officers of the international organization, as well as by the officers of the district, and it shall be their duty to see that all such agreements are carried out both in the letter and in the spirit.

"Eleventh—The pushing of cars, loaded or empty, by the mine workers is natural to the industry and is an integral part of the day's work, and in the negotiations of 30 years this work where practised, has been paid for in general in the tonnage rates.

"Twelfth—The prices at which house coal shall be furnished the mine workers at the tipple shall be determined by adding to the price in effect on Oct. 31, 1919, the average percentage allowed as an increase on the wage scale to wit: 27 per cent, and when the coal is delivered to the miners' houses by the operator the actual cost of delivery shall be added.

"Thirteenth—For the purpose of the new agreement the prices charged the miners for blacksmithing shall be on the basis of existing contracts, providing, however, that the maximum charge shall not exceed three-fourths of 1 per cent of the miner's gross earnings.



"Fourteenth—Explosives shall be furnished the miners at cost, which cost is to include handling, transportation and insurance.

"Fifteenth—This contract is effective on April 1, 1920, and shall remain in force until March 31, 1922.

"Resolved, That an interstate joint conference be held prior to April 1, 1922; the time and place of holding such meeting is referred to a committee of two operators and two miners from each state herein represented, together with the international officers of the United Mine Workers' organization.

"Section 11 is not designed to interfere with existing arrangements relating to car pushing or prevent miners and operators from working out mutually satisfactory arrangements with reference thereto."

Claims by the bituminous operators that the increases granted in the new working agreement would result in the price of coal at the mines being increased from \$1.25 to \$1.50 per ton resulted in a statement being issued by Ellis Searles, editor of the *United Mine Workers' Journal*, on April 1, in which he said the increase does not justify the advance in the price of coal and that it was unfair to charge the miners with the responsibility. Mr. Searles is in New York with the officers of the international union.

#### OPERATORS REPLY TO SEARLES' STATEMENT

The operators through Chairman Brewster of the operators' committee, replied to Mr. Searles' statement the following night from their headquarters in this city. Mr. Searles' statement says:

"When Dr. Garfield granted the miners a 14-per cent increase in wages last fall he said the 14 per cent could and should be absorbed by the operators and that they could afford to pay it out of their profits, but the operators did not pay the increase out of their pockets. Instead, by increasing the selling price, they passed the increase on to the public in respect to at least 80 to 90 per cent of the coal. The present increase in wages adds 13 per cent to the pay of the miners above the 14 per cent granted by Dr. Garfield. If Dr. Garfield was right in saying they could absorb and pay the 14 per cent out of their profits, then they certainly can absorb at least the 13 per cent now instead of passing it on to the public.

"We see operators quoted as saying they will advance the price of coal \$1.25@ \$1.50 a ton because of the increase of wages granted to the miners. Such an increase would not be justified by the increase in wages. The wage increase was 27 per cent. This means that the increase in the cost of production cannot exceed 40 to 50c. a ton. Then why should the operators boost the price \$1.25 or \$1.50 a ton even if they pass all of the increase on to the public?

"If the operators make an unreasonable or unnecessary increase in the price of coal, the miners want the public to know they are not responsible for it."

The reply of the bituminous operators, made through Mr. Brewster, reads:

"Insinuations that the coal operators are going to gouge the public because of the recent 27-per cent advance in wages, as put out by the United Mine Workers' spokesmen in the guise of protest in the public interest, are sheer nonsense.

"During the coal miners' entirely unwarranted and unlawful cessation from work all stocks of coal were depleted and a shortage now exists throughout the

country. The replenishing of stocks has been retarded by a serious car shortage. Consequently, large consumers of soft coal are competing for the available supply, which has resulted in the offer of higher prices than the operators are willing to accept.

"All responsible operators will condemn unwarranted prices or any profiteering policies. The Bituminous Coal Commission having awarded the miners a wage scale giving them very high earning power, the public now has the right to demand more work, with advanced coal production, and less talk."

#### WANTS EIGHT HOURS' WORK FOR EIGHT-HOUR DAY

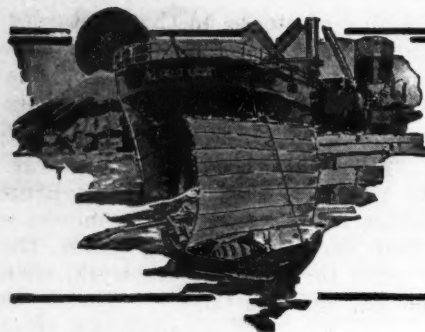
Before leaving for Indianapolis last Saturday night, April 3, Ellis Searles, editor of the *United Mine Workers' Journal*, said: "The operators are endeavoring to justify the high prices they are asking for coal by saying that the increase in wages granted to the miners and a shortage of coal are responsible for it. They say large consumers are offering higher prices for soft coal than the operators are willing to accept. If the operators will operate their mines eight hours a day, six days a week the miners will gladly dig enough coal to meet all demands and keep prices down to a reasonable level. This will relieve the operators of their terrible embarrassment of being compelled to accept larger profits than they think they are entitled to. The operators fought to retain the eight-hour day and succeeded in holding it. Now let them give the miners eight hours' work six days a week."

No question exists that there is a fear on the part of many bituminous-coal operators that coal prices will rise to inordinate levels if a great deal of self-repression is not used. The public is ready, though not willing, to pay almost any price for coal, and it is as hard to prevent the average bituminous operator from selling for all he can get as it is to stop him from giving coal away when orders are scarce. Until recent years it has been considered permissible to let supply and demand govern prices, but a new point of view in regard to the conduct of the producer's business now obtains.

#### MINERS SEEK TO SECURE EXCESSIVELY HIGH WAGES

While the operator is being condemned for accepting prices set by the market fluctuation, the mine workers have been trying by combination and a strike in restraint of interstate commerce to put up wages above the level set by supply and demand and to fix them at that excessive level by a collective bargain. This is quite different matter from the charge brought against the operator, who merely accepts what is offered. For the operator to accept such offers may be wrong, and just now certainly inexpedient, but it is a privilege that has never been denied the worker in the history of the United States, though it is one that has not always been conceded in foreign countries.

As to the opportunity to work full time, the mine worker in a majority of cases refuses to avail himself of it and if he were willing to do so, it would not be possible to satisfy his desire as cars are frequently lacking, and when they are obtainable orders are not to be secured. Furthermore the wage of the mine worker has just been fixed on a liberal basis with the shortage of time in full view, but the mine worker is, nevertheless, demanding full time as his right as if such liberal increase had not been made.



# FOREIGN MARKETS AND EXPORT NEWS



## Freight Rates to Europe Advance

Freight rates to Europe have advanced slightly, but rates to other destinations are unchanged, according to W. W. Battle & Co.'s coal trade freight report.

Rates by steamer are as follows:

|                          | Rate          | Tons Displaced |
|--------------------------|---------------|----------------|
| Stockholm.....           | \$22.00/22.50 | 800            |
| Gothenburg.....          | about 22.00   | 1000           |
| Antwerp/Rotterdam.....   | about 19.50   | 1000           |
| Hamburg.....             | 21.00/22.00   | 1000           |
| French Atlantic          |               |                |
| excluding Rouen.....     | about 19.50   | 800            |
| Lisbon.....              | 18.00/19.00   | 1000           |
| Barcelona.....           | 21.50/22.00   | 1000           |
| Algiers.....             | 21.50/22.00   | 800            |
| Marseilles.....          | 21.50/22.00   | 1000           |
| Genoa/Leghorn.....       | about 22.00   | 1000           |
| Spezia/Savona.....       | about 22.00   | 1000           |
| Piraeus.....             | about 25.00   | 1000           |
| Trieste/Venice.....      | about 26.00   | 1000           |
| Port Said.....           | about 26.00   | 1000           |
| Pernambuco.....          | about 15.50   | 500            |
| Bahia.....               | about 15.50   | 500            |
| Rio.....                 | about 14.50   | 1000           |
| Santos.....              | 15.00/16.00   | 600            |
| Buenos Aires or          |               |                |
| La Plata or              |               |                |
| Montevideo.....          | 13.00/13.50   | 1000           |
| Para.....                | about 14.50   | 500            |
| Rosario.....             | 15.50/16.50   | 750            |
| Bahia Blanca.....        | about 16.00   | 1000           |
| To Nitrate Range.....    | 9.00/10.00    | 750            |
| Havana.....              | 6.00/6.50     | 600            |
| Sagua or Cardenas.....   | 8.00/8.50     | 300            |
| Cienfuegos.....          | about 8.00    | 500            |
| Caibarien.....           | 8.00/8.50     | 300            |
| Guantanamo.....          | about 8.00    | 500            |
| Manzanillo.....          | about 9.00    | 300            |
| Bermuda.....             | 7.00/7.50     | 300            |
| Bermuda p.e. & dis. free |               |                |
| Kingston.....            | about 8.50    | 400            |
| St. Lucia.....           | about 9.50    | 500            |
| Barbados.....            | about 9.50    | 500            |
| Santiago.....            | about 8.00    | 500            |
| Port of Spain, Trin..... | 9.50/10.00    | 500            |
| Curacao.....             | 8.50/9.00     | 500            |
| free p.e. Curacao        |               |                |
| Demerara.....            | 13.00         | 400            |
| St. Thomas.....          | about 8.00    | 500            |

All above rates gross form charter.

## British Coal Output Estimated at 217,000,000 Tons

There has just been issued an official report of the British coal industry, in which are set forth the findings of Alfred Tongue & Co., chartered accountants, on the estimates of the Coal Control Department with special reference to figures on which that department based the increase of 6s. a ton in coal prices last July, and the further figures on which the reduction of 10s. a ton in the price of coal was based last December. Consul General Robert F. Skinner, London, states: [The values in United States currency are based on normal rates of exchange (\$4.86 to the pound sterling). The present value of the British pound is \$3.83].

In July, 1919, the then coal controller put the estimated production for the year ending July 15, 1920, at 217,588,000 tons, and, taking the ascertained profits of 3s. 6d. (\$0.872 at normal exchange) per ton for the third quarter of 1918 as the starting point, arrived at an estimated deficiency of \$46,600,000 (\$226,778,900), equal to 4s. 3d. (\$1.034) per ton on the whole output and 5s. 9d. (\$1.409) on that part of the output on which an increased price would be effective. The findings of the accountants in regard to these figures are summarized as follows:

The estimates contained in them were in respect of a year's working of the industry from July 16, 1919, to July 15, 1920 (ignoring any loss prior to July 16, 1919), and being estimates so far ahead in such a

complicated industry could not reasonably be expected to be accurate in view of events and circumstances arising after the date the estimates were made.

Viewed in the light of the data then available, however, we are of opinion that: The estimated output of 217,000,000 tons was fair and reasonable.

The rate of profit taken as the basis for computation, viz., 3s. 7d. per ton raised, was also fair and reasonable.

The cost of production was underestimated, especially in respect of wages, this cost being estimated at £209,000,000 (\$1,017,100,000), as compared with our figure of £216,000,000 (\$1,051,200,000).

The revenue was underestimated to the extent of about £30,000,000 (\$146,000,000), mainly due to an undervaluation of the proceeds to be obtained from exports and bunkers.

In response to the personal request of the Prime Minister, the accountants present their own provisional estimate of the results for the year ended March 31, 1920, in the light of the facts so far as they are known today, and report: "It will be seen that in our opinion and so far as can be estimated the surplus remaining on the working of the industry for the current financial year will be approximately £6,000,000."

This estimated surplus of £6,000,000 (\$29,199,000) as at March 31, 1920, includes the gain accruing on the advance of 6s. per ton on inland coal made in July, 1919, less the loss in revenue resulting from the reduction of 10s. per ton on domestic and household coal, and the reduction of coastwise bunkers, from Dec. 1, 1919.

A cablegram from Newcastle, Australia, announces that 240,000 tons of coal were mined during the month of February. Bunker coal supplied to overseas vessels amounted to 34,380 tons, and 65,271 tons

were exported overseas, excluding bunkers. The balance of coal was used for consumption in Australia. Several British vessels have been engaged to take coal to West Africa to which the freight rate is 97s 6d. The marine engineers' strike ended Feb. 26.

## Danish Fuel Imports Are Less Than Half Those of Pre-War Days

Denmark's total imports of coal, coke, cinders and briquets in 1919 amounted to only 2,616,997 tons, which is about 300,000 tons more than in 1918, but far below the imports in 1914, which were 7,000,000 tons. Of the imports in 1919, only 383,196 tons came from Germany, the rest coming almost exclusively from England.

Denmark's supply of coal is still very limited and a number of the war-time restrictions have been reintroduced. The resumption of American coal export is not expected to have any material influence upon the general situation, the high dollar rates preventing a large-scale import of American coal.

## Public Tipple at New Orleans Will Operate May 1

With the early completion of a huge public tipple now in course of construction, New Orleans will be able to offer greatly increased bunkering facilities to shipping in addition to exporting a considerable amount of coal. This tipple, which is costing the state \$500,000, will put the port in a position to send 500,000 tons a year to the Panama Canal, as well as large quantities to Mexico, Cuba and South America.

## Coal Exports from New York During February

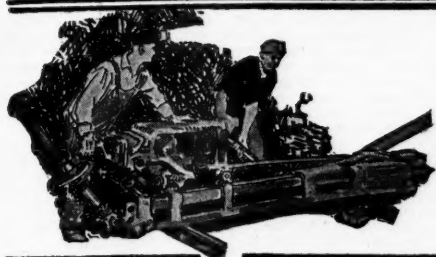
There were 2,933 tons of anthracite, 2,856 tons of bituminous and 1,924 tons of coke with a valuation of \$63,672 shipped to foreign countries through the port of New York in February of this year. This was a gain of \$8,293 in valuation and 1,951 tons, when compared with the exportations in the same month of 1919 when the shipments were 615 of anthracite, 3,561 of bituminous and 1,586 of coke with a valuation of \$55,379 or an average cost per ton of \$9.61, as compared with \$8.25 for this year's shipments.

Shipments of anthracite were made to 8 countries in February of this year, as compared with 5 countries in 1919, while bituminous was sent to 6 countries in 1919 as compared with 4 countries this year. The valuation of the 1,924 tons of coke shipped last February to 7 countries was \$19,299, while 1,586 tons shipped in February, 1919, was valued at \$22,608, a decrease of 338 tons, but an increase in value of \$3,309.

The following tabulation shows the shipments in February of this year compared with the same month last year:—

|                       | Anthracite |         | Bituminous |          | Coke     |          |
|-----------------------|------------|---------|------------|----------|----------|----------|
|                       | 1919       | 1920    | 1919       | 1920     | 1919     | 1920     |
| Tons                  | Value      | Tons    | Value      | Tons     | Value    | Tons     |
| Argentina.....        | 40         | \$606   | 2,017      | \$13,485 |          |          |
| Barbados.....         |            |         | 300        | 2,100    | 190      | \$1,582  |
| Brasil.....           | 223        | 1,840   | 1,229      | \$11,371 |          |          |
| Canada.....           |            |         | 3          | 60       |          |          |
| Colombia.....         |            |         |            |          | 27       | 915      |
| Costa Rica.....       |            |         |            |          |          |          |
| Cuba.....             |            |         |            |          |          | 1        |
| Danish W. I.....      |            |         | 469        | 3,142    |          | 25       |
| Dutch W. I.....       |            |         |            | 1,037    | \$6,222  |          |
| Ecuador.....          |            |         |            |          |          | 10       |
| France.....           |            | 7       | 80         |          | 1,311    | 18,396   |
| French W. I.....      |            |         |            |          | 2        | 65       |
| Greece.....           |            | 5       | 55         |          |          |          |
| Italy.....            |            | 192     | 2,535      | 500      |          |          |
| Mexico.....           |            |         |            | 9        | 245      |          |
| Netherlands.....      |            | 520     | 4,410      | 1,800    | 10,800   |          |
| Norway.....           |            |         |            |          |          | 35       |
| O. Br. W. I.....      | 50         | 753     |            |          |          | 438      |
| Panama.....           |            | 289     | 2,328      |          |          |          |
| Peru.....             |            |         | 75         | 1,154    | 10       | 240      |
| San Domingo.....      |            | 688     | 6,027      |          | 36       | 1,060    |
| Spain.....            |            |         |            |          | 1,862    | 18,225   |
| Turkey in Asia.....   | 101        | 1,285   |            |          | 3        | 24       |
| Turkey in Europe..... | 201        | 1,706   | 200        | 1,700    | 3        | 73       |
| Venezuela.....        |            |         |            |          | 20       | 590      |
| Totals.....           | 615        | \$6,190 | 2,933      | \$26,866 | 3,561    | \$26,581 |
|                       |            |         |            | 2,856    | \$17,507 | 1,586    |
|                       |            |         |            |          | \$22,608 | 1,924    |
|                       |            |         |            |          |          | \$19,299 |





# COAL AND COKE NEWS



## Charleston, W. Va.

### Chesapeake & Ohio Mine's Big Gain—Monday's Record—Contracts Closing Slowly—Letup in Coal Confiscation

More coal was mined in central southern West Virginia during the week ended March 27 than during any other weekly period of the month, it is believed, the output being in rather marked contrast to the preceding week. While gains were made, therefore, in production, it still left the output far from normal, transportation troubles still being the principal factor in preventing a large output.

Increased production for the week was made possible largely because of an almost normal car supply on the first day of the week; the car supply during the remainder of that period was in rather sharp contrast to Monday. There was a larger supply of cars on hand in all Chesapeake & Ohio fields on the twenty-second than has been observed for the first day of the week in recent years. With nearly 3,300 cars distributed to the mines, the output was almost equal to potential capacity, reaching 163,000 tons.

While Chesapeake & Ohio mines had a somewhat larger run of cars than usual and were able to increase their output, the reverse was true as to mines located on the Kanawha & Michigan throughout nearly the entire week; a slide and a wreck combined, virtually shutting off the car supply for three days. In fact it was not until Saturday that Kanawha & Michigan mines were able to load anything like a normal output, the supply of cars previous to that day amounting to little more than a handful. In this section of the state, at least, the month's average of cars furnished is just about the same as that for February or from 53 to 55 per cent.

### New River Record Smashed

The curve of production was upward in the New River field in the week ended March 27, that being a reversal of conditions prevailing in the week ended the twentieth, an increased car supply making a larger output possible. However, it was the favorable car supply at all mines at the outset of the weekly period, which made it possible to ship more coal than during the preceding week, for after Monday there was scarcely more than a 50 per cent run of cars. With a production of nearly 29,000 tons on Monday, the twenty-second, recent records for Monday loadings were smashed. The total production for the week reached about 125,000 tons, representing an approximate gain of 25,000 tons.

Time was being taken by producers in closing contracts, and it was doubtful, as the month closed, if there was more than 40 or 50 per cent of the New River output for the coal year under contract, many operators having reached a decision to hold a part of their output for the open market. It is the desire of New River producers to hold down prices as much as possible and not to encourage speculation. With that end in view only a price sufficient to cover an increase in wages and to afford a reasonable return will be charged.

Not only was confiscation of coal becoming less general as the month ended, but outstanding accounts for coal taken during the strike were being rapidly liquidated. With permits still being required for export shipments, the overseas consignments from the New River field were rather limited despite the heavy movement to tidewater.

### Improved Kanawha Car Supply

Impetus was given the production of the Kanawha field in the last week of March, through a greatly improved car supply on Monday, March 22. In fact on that day production broke all records in recent months, the total output reaching nearly 37,000 tons. That became possible when nearly 740 cars, or virtually a full supply was furnished the mines, and it was largely

because of this greatly increased supply that the Kanawha field was able to forge ahead of other weeks in point of production.

As far as the contract situation in the Kanawha field was concerned, producers here seemed to be waiting to get their bearings before closing many contracts, although there were many buyers in the field. Indeed producers hardly know just what a fair price is, being so used to having the Government make the price for them. Some operators believe that after the first of April Kanawha mine-run coal will average about \$4 a ton.

While some coal from the field was being confiscated, yet it was stated that such confiscation was not so general as it had been in previous weeks. Much of the output of the field was moving eastward but only a limited amount of Kanawha product was being exported.

## Bluefield, W. Va.

### Little Change in Smokeless Production.—Operators Slow About New Contracts—Strike of Railway Clerks

Transportation trouble still held production down in the extreme southern part of the state in the period between March 22 and 27. Little improvement was shown in the car service over the previous week, although on the other hand it is not believed that the transportation was any worse. Even with a slightly better run of cars in all fields, it is doubtful if the output of such fields as a whole was more than 55 or 60 per cent, if that much; maximum working time at most of the mines being about four days and in some cases three days.

While sending foreign cars home with dispatch and getting its own cars back to some extent, the Norfolk & Western still had by far the larger proportion of its own equipment on other lines. Despite the fact that there is known to be a shortage of coal cars, railroads are permitting the use of coal-carrying equipment for other purposes, particularly for the transportation of automobiles, and it is believed that such coal cars will be out of the coal-carrying trade for several weeks. Coal cars are being used for shipping automobiles into the coal fields, and they can be loaded with coal on the return trip.

### Many Buyers After Smokeless

The week in southern West Virginia was featured by the advent of many buyers seeking smokeless coal for delivery during the new coal year. Producers, however, were not to be stampeded, and it is not believed that many large contracts were closed. In fact southern West Virginia coal men are biding their time, until conditions become somewhat more settled; the larger agencies especially having no desire to precipitate a reign of unduly high prices. Furthermore, southern producers apparently do not propose to tie up their entire yearly output in contracts, but will hold a part of their output for spot sales.

Reports from various sources indicated that indebtedness, in connection with strike coal shipments, was being liquidated with greater celerity, toward the end of March, than earlier in the year; though large amounts were still outstanding, despite the fact that more than three months had elapsed since the end of the strike.

Despite heavy tidewater shipments from various southern fields, exports were not running as large in volume as might be expected, owing to the continuance of restrictions. Complaint of confiscation, however, was less general than in previous weeks.

Lack of adequate transportation facilities was still preventing anything like a normal production in the Pocahontas region, in the period ended the twenty-seventh. As a matter of fact the inadequate car supply was responsible for about a 40 per cent loss, mines being limited to about four days

of operation during the week. While the Norfolk & Western appeared to have a few more empties on its lines than during the preceding weekly period, nevertheless, the increase was so small as to make no appreciable change in production.

It has been found impossible for the Norfolk & Western to have as many of its own cars returned as had been hoped and as the road had made an effort to do. It was becoming more and more apparent, also, to Pocahontas producers, that railroads were careless in the use to which open top cars were put. Coal men in the southern regions felt that open top cars ought to be confined to the coal-carrying trade, in view of the general shortage of coal throughout the country.

With Government prices out of the way and with producers free to make contracts, there was a bevy of buyers in the Pocahontas region toward the close of the month; however coal companies were awaiting further adjustment of conditions and not precipitately entering into contracts. Only a small proportion of Pocahontas coal was under contract by the end of the month, no particularly large contracts having been reported closed between the twenty-third and the thirty-first.

Cold water was being thrown on the enthusiasm of numerous buyers, jobbers and speculators seeking tonnage, such would-be purchasers having little chance of success except in a small way, as the heaviest producers were evidently not contracting, and were endeavoring to heed the President's request as to prices. During February, shipments from the Pocahontas field were the lightest in five years, amounting to only 927,137 gross tons.

### Better Car Supply on the Gulf

There was an upward curve to production in the Winding Gulf field in the period ended the twenty-seventh, chiefly because of a somewhat better car service furnished by the Chesapeake & Ohio; the mines on this road having about a 50 per cent car supply, were able to work about four days out of the six. The car supply on the Virginian was running just about 70 per cent. Winding Gulf producers were in line with other smokeless operators in regard to making contracts, apparently awaiting developments such as the condition of the market, wage advances and so on. Owing to permit regulations, not a large quantity of Winding Gulf coal was being exported as the month drew to a close. Plenty of opportunities were offered for the disposal of the entire Gulf output, but part will be held in reserve for sale in the open market especially in view of the likelihood of quite a heavy demand.

During the week ended March 27, the mines of the Tug River field loaded 82,700 net tons of coal, 1,700 tons in excess of the output for the previous week. With Government supervision almost entirely removed, it is probable that contracts will be largely entered into as of April 1. Buyers were scouring the Tug River field for available tonnage and are offering considerably in excess of the best export price (\$4.10). This may have considerable influence on the volume which has been seeking export channels.

### Norfolk & Western Railway Clerks Strike

The strike of railway clerks, starting at Roanoke on the twenty-sixth, was assuming serious proportions during the last few days of March. On March 30 it was reported that all the clerks on the Sciota division went out. All clerks at the Bluefield scale house were on strike during the last three days of the month, but volunteers had been able to keep the movement of coal normal.

At such large weighing points as Portsmouth more difficulty was apprehended and it was considered probable that volunteers would have to be sent from Bluefield. It was stated that the public was not in sympathy with the movement to hamper the railways. Business men in the coal fields were offering any assistance necessary to the transportation company.

## Huntington, W. Va.

### Logan Output Down to Very Minimum —Export News—Wages to Advance

Car-shortage losses in the Logan field had, in the week ended March 27, reached unprecedented heights, there being no less than 258,000 tons lost from that source alone, cutting down production to the very minimum. In fact the total estimated output for the week in question was only a little more than 175,000 tons, or approximately 35 per cent of potential capacity.

Conditions were just about as unsatisfactory as they could be in the field at the end of the month, chiefly because of a transportation handicap. Not in a long time, however, have cars been more plentiful than they were at the advent of the week. With 1,052 cars on hand Monday, March 22, the mines here were able to produce and ship more than 52,000 tons of coal; that production was far in excess of any previous week since the end of the coal strike.

Logan producers and shippers were declining to be hurried in the matter of completing contract arrangements for the new year, mainly waiting to see what wages and prices generally would be; while rather fancy prices were being offered for Logan coal, this failed to tempt the mine owners, who are unwilling to see prices become unduly high. While Logan fuel is in much more demand in export markets, and enjoys a larger market in the East than in previous years, the quantity for trans-Atlantic shipment was rather limited, although somewhat larger than was the case earlier in March.

There was no question but what the wages in the Logan field will be raised at the proper time in order to meet the advances made in union fields, that having already been done, it is reported, in some instances.

There was a material increase in the tonnage handled by the Chesapeake & Ohio as a whole during the week ended the twenty-seventh, as compared with the previous week, the increase amounting to 1,736 cars or 86,800 tons. In other words, total loadings, during the period ended the twentieth, amounted to 9,792 cars (or 489,600 tons) as against 11,528 cars (or 576,400 tons) for the following week.

## Fairmont, W. Va.

### Less Idle Mines in Northern Fields— More Coal Goes to Tide—Its Further Destination

Production in northern West Virginia fields, though falling far short of normal, during the week ended March 27, was still much better sustained than during earlier weeks of the month and especially during the week immediately preceding. Even with cars more plentiful, however, there was not much more than a 55 per cent output. As usual the chief obstacle to a larger production was the scarcity of cars.

The initial supply of the week especially on the Baltimore & Ohio Railroad, was such as to swell the week's total production, the first day's supply being the only one at all approaching normal. Monday's car supply on this road was equal to about 89 per cent of requirements, there being in excess of 1,400 cars available for loading on the day mentioned.

While Baltimore & Ohio mines were fairly well supplied on Monday, such was not the case as to Monongahela mines, the quota furnished to mines on that road amounting to only about 50 per cent of requirements. Mines on other roads in the northern part of the state were not so fortunate, having only about a fifth of the required number of cars on hand.

Throughout the week ended the twenty-seventh, the run of cars, on the Baltimore & Ohio at least, did not run much below 50 per cent at any time; on other roads there was a gradual improvement, idleness at all mines being less prevalent than during the previous week. Another factor in building up the car supply, during the week ended the twenty-seventh, was the fact that the Western Maryland had resumed handling coal from a part of the Fairmont region—that part of the field on Helen's Run.

More coal was shipped from northern West Virginia points to Curtis Bay and other tidewater piers for export, and it was believed that more coal was really being exported than had been observed during the previous part of the month. A stop had been put to export shipments

from Curtis Bay piers early in the month; but so much complaint was made against prohibiting export shipments from that point, while permitting other tidewater piers to ship coal in the export trade, that toward the latter part of the month restrictions were lifted.

One effect of the removal of restrictions was to increase the loadings to Curtis Bay from northern West Virginia very materially as the month drew to a close. In the absence of exact figures it is believed that the number of cars consigned to the Curtis Bay terminal, in the week ended the twenty-seventh was in the neighborhood of 1,000 or more.

During the greater part of the week above mentioned railroad fuel shipments were running ahead in volume of those of the previous week, no doubt because of the increased number of cars available. While the Baltimore & Ohio was securing a large tonnage from mines reached by it, there was also a heavy tonnage being shipped to New England roads. Not only were New England roads securing a large volume of northern West Virginia coal but other classes of consumers in the New England area were getting large consignments, part of which were being routed by water.

While the President's proclamation, suspending Government price control and Government distribution, was the signal for buyers to invade the northern West Virginia field, yet most producers were feeling their way, being unwilling to close any deals for the delivery of coal, until a general price basis was reached. It was also apparent, as the month drew to a close, that operators did not propose to tie up their entire output in contracts.

It is believed in the northern West Virginia fields, that there will be a heavy demand in the Lake trade this season, and northern West Virginia operators are looking forward to the opening of the Lake movement with a feeling of optimism. The operators will be fully able to take care of Lake business if transportation facilities are satisfactory.

## Louisville, Ky.

### Coal-Tonnage Tax Urged in Kentucky —Legislative Action—Governor Morrow's Statement—Report of State Geologist

Coal taxation on a tonnage basis has been up for discussion for some time in the Kentucky Legislature. On the night of March 15, an effort was made to amend the Omnibus License Tax Bill, by placing a 2c. per ton tax in this amendment. Lieutenant Governor Ballard ruled the amendment out of order, and on an appeal the decision of the chair was sustained by a 22 to 11 vote.

Mr. Ballard is a coal operator himself, and, while declaring his advocacy of the proposed tax on coal, held that the amendment was out of order as it was not germane. Senator Smith offered an amendment which was killed by a vote of 21 to 16, and which provided for a tax of \$5 a day on 25 to 50-ton mines; \$10 for 50 to 100-ton mines; \$20 for 100 to 200-ton mines; \$40 for 200 to 500-ton mines, and \$75 for mines over 500 tons a day capacity.

### Coal Tax To Be Scientifically Planned

Senator Antle, in opposing the Smith amendment, stated that Governor Morrow was planning a coal-tax law to be enacted before his term of office shall expire. Governor Morrow when asked concerning the statement said it was true, but that the administration planned to go about it in a broad way, realizing that one of the largest state industries is at stake.

He said: "We will not go about it in the slipshod, hap-hazard way, as indicated by the amendments offered here tonight, and by other measures offered at different times during the session. There is too much at stake. We are going to make a scientific survey of the situation and then pass a measure accordingly. Every measure offered so far has been the result of guesswork. No account whatsoever has been taken of differentials in different parts of the state, or other details that have to be considered for the right kind of tonnage-tax bill."

This statement was approved, as no consideration apparently was taken of high and low-grade coal and profitable and unprofitable mines; and placing a flat tax of 2c. a ton on all grades, from every district, would do a vast injustice to the industry.

W. R. Jillson, State Geologist, in a recent report on the coal conditions in the state, showed that from 1911 to 1918 Kentucky

produced 176,105,234 tons as against 157,971,800 tons from 1828 to 1910. Production started in 1828, but in 62 years (from 1828 to 1890) the state produced less coal by several million tons than is produced now in a single year. It now produces as much coal in two years as during the period between 1898 to 1907, when 70,000,000 tons were mined.

The Senate Committee of the Legislature secured some facts in arguing for a tonnage production tax, and figured 1919 coal output at 31,000,000 tons, which is probably about two and one half million tons higher than actual production during the year. In southeastern Kentucky, Pike, Bell, Letcher and Harlan counties have led, and in western Kentucky, Muhlenburg, Hopkins, and Webster. The Hazard district has been growing rapidly, and also the Elkhorn district. During the past ten years, Kentucky has just about made a good start, as a big coal-producing state, and has a great prospect before her.

## Ashland, Ky.

### Railroad Fuel in Hands of Committee— National Associations Handle Matter —Wages, Prices and Markets

The week ended March 27 was the first period in several months, in the northeastern Kentucky field, when the week's output exceeded the output for the corresponding week of 1919. A "no-market" condition was still quite prominent during the week of the earlier year, production for the period named in 1919 having been 115,500 tons; whereas, during the week ended the twenty-seventh, it had been increased to 122,545 tons or 47 per cent of the total full-time capacity (259,115 tons), the total loss being 136,570 tons, or 53 per cent of potential capacity.

A total of 131,290 tons or 51 per cent was lost during the period above stated, the loss from other causes reaching only 5,280 tons or 2 per cent. The tonnage given represented an increase in production of about 15 per cent and placed the production on a parity with the second week in March.

A quite marked improvement in the car supply was in evidence along the Chesapeake & Ohio and its branch lines, mines being able to work about 60 per cent of the time. To offset that improvement, however, the Louisville & Nashville supply became even worse than that for the previous week, and in many cases the mines were permitted to work only one day during the week, the average supply being approximately 23 per cent.

### Vicious Practice To Be Abolished

The Chesapeake & Ohio management, recognizing the unfairness of its position, with respect to preferential car supply, to mines supplying the roads with its fuel, cancelled such instructions and once more placed all mines on an equal distribution basis. In fairness to the railroads, every effort is being exerted by certain operators, in the northeast Kentucky district, to arrange for an adequate supply of fuel for the railroads, in order that carriers may not find it necessary at any time to resort to the assigned-car practice.

In connection with the railroad fuel supply, the Northeast Kentucky Coal Association will support the action taken at Washington recently by the National Coal Association, in appointing a committee to deal directly with the American Railroad Association and the individual railroads, for the purpose of securing full requirements of the railroads in the various districts.

Such an arrangement is predicated, however, upon the railroads paying the regular market price for their purchases. Once the railroads agree to that, there is no question but that they will be amply supplied; if finally effected, this plan will remove for all time the evils resulting from the employment of arbitrary methods by the railroads.

Many signs of relief were given by the eastern Kentucky operators, about the twenty-third, when news reached Ashland that President Wilson had lifted the ban (effective April 1); the belief was expressed that eastern Kentucky operators would meet fully the wage advance recommended by the majority report of the Bituminous Coal Commission.

Some quite attractive prices have already been made for contract business during the ensuing year, and jobbers' representatives are becoming active in the field with a view to completing their contract negotiations at an early date. The splendid reputation established for the Elkhorn coals, for by-



product, coking and gas purposes, has resulted in many such companies looking to the eastern Kentucky field, thus opening up new markets to the eastern Kentucky producers.

## PENNSYLVANIA

### Anthracite

**Wilkes-Barre**—The Stanton mine of the Lehigh & Wilkes-Barre Coal Co. has been partly flooded, due to a breakdown of the pumps, and as a result 400 men have been idle for a few days. At present there is 14 ft. of water in the shaft. Large water tanks are being used to assist the pumps. These tanks have an estimated capacity of 1,000 gallons each and are being hoisted at the rate of about 110 per min. Only the lower level of the shaft, which is about 1,000 ft. deep, is affected. The upper levels are still being worked.

**Scranton**—The recent thaws have done considerable damage to the mines in this region by causing floods, which have temporarily caused a number of the mines to close down, including the Greenwood and Jermyrn No. 1. In the former mine the water is said to be forty feet deep. The Delaware, Lackawanna & Western Company has had considerable trouble at its Bellevue mine, where the water has backed up so that it has overflowed into the Oxford mine of the Peoples Coal Co. The water in this mine was six feet deep at the shaft bottom. The Pennsylvania Coal Co. and the Lehigh Valley Coal Co. have two of their mines near this place flooded. The Temple Coal Co. has had a little difficulty from water but it is reported that conditions at its mines have again become normal. Considerable difficulty has arisen in the handling of the water at some collieries due to a shortage of pipe.

A resolution has been adopted by the Scranton City Council recommending that an excise tax on all anthracite mined in the state be included in the new constitution.

**Hazleton**—Mine-examining boards report few applicants for miners' certificates, a condition which has brought forth a number of comments. There is a dearth of miners in the Hazleton field; this may be explained by the earnings of "company men" who receive nearly as much wages as the average contract miner and whose duties are lighter. As for laborers, they are not applying for jobs; the places are looking for the men.

The Raven Run Coal Company, a Wentz subsidiary at Raven Run, near Mahanoy City, has let a contract to the Central Pennsylvania Stripping & Quarrying Construction Co., for a large stripping. It is estimated that it will take about ten years to complete the work. The Wentz interest has let another contract to the same contracting company for a stripping east of Hazle Brook near Buck Mountain. This latter stripping will take five years to complete. Several reservoirs must be abandoned to permit the work to proceed.

The Lehigh Valley Coal Co. is contemplating starting some large new strippings, one of which will be at Buck Mountain, where Cox Bros. & Co. stripped years ago, but where more coal has recently been discovered. Another stripping will probably be near Jeansville and a third close to the Coleraine colliery.

The G. B. Markle Company is considering the purchase of the mines of the Harleigh-Brookwood Coal Co., which is controlled by the Madera-Hill Co. No decision has been reached in the matter as yet. The mines of this company at Harleigh are at present flooded; these workings adjoin the old Ebervale mines. The Harleigh mines could probably be readily dewatered by means of the drainage tunnel at the Ebervale workings.

Considerable difficulty has been encountered by the various coal companies in this region, due to the flooding of their mines with water; a difficulty the G. B. Markle Co. escaped, due to the fact that its mines are drained by a tunnel 15,000 ft. in length. The other mines in this district are not similarly equipped and, as a result, have been forced to shut down either wholly or in part. The Markle company would have had no difficulty at all, if it had not been for the fact that a large drainage canal on the surface overflowed, and the water ran into the mines at the rate of 36,000 gal. per min. for a number of hours. The drainage tunnel successfully handled this water only causing a shut down for about 24 hours.

## WEST VIRGINIA

**Charleston**—Instances having arisen where West Virginia producers have shipped coal to bankrupt concerns, under orders from the U. S. Fuel Administration, Congressman S. F. Reed, of the Third West Virginia district, has indicated that he will

either introduce special bills, providing for the relief of those who have been unable to secure settlement for coal shipped, or that he will introduce a bill creating a commission, to pass upon claims of those who are in the same category with a constituent of his. Congressman Reed was unable to make any headway, in aiding in the collection of a bill for a large shipment of coal consigned to a bankrupt firm at the instance of the Fuel Administration, there being no Fuel Administration any longer. The Director General declines to assume any responsibility for the acts of the Fuel Administrator, and the Department of Justice is also unable to furnish any relief, or to make any suggestion as to how the West Virginia shipper might be reimbursed.

**Huntington**—The headquarters of the Logan Operators' Association has been moved from Logan to Huntington, the change in the location of headquarters having been made about March 27. J. W. Colley, secretary of the association, and R. J. Manley, traffic manager, will both have their headquarters at Huntington. C. J. Neekamp, who will look after the car supply, will have his headquarters at Logan. Many of the operators of the Logan field live at Huntington, the distributing, supply and banking center of the Logan region.

## KENTUCKY

**Whitesburg**—Reports are to the effect that many miners are going back to the farms as tenants or laborers, due to steady car shortages, which are resulting in mining being a poor money-making occupation. Such reports are being received from both the Elkhorn and Hazard fields.

**Louisville**—A report from Letcher County, Ky., is to the effect that the recently organized W. E. Deegans Consolidated Coal Corporation (a \$5,000,000 company of West Virginia), will start two extensive eastern Kentucky developments; one on the Louisville & Nashville, in the Elkhorn field, and the other on the Chesapeake & Ohio, in the Big Sandy field. It is claimed that the company plans two big developments with a capacity of 1,000,000 tons eventually, and that two mining towns will be built.

Estimated production for 1919 in Kentucky has been given at 28,500,000 tons, as compared with 31,612,617 tons in 1918 and 27,807,971 in 1917. The strike last fall more than offset losses occasioned in the fall of 1918 by influenza, while dull business in the early part of 1919, and car shortage from July to the close of the year, reduced tonnage considerably.

While numerous reports have been received concerning plans of the Louisville & Nashville R.R. for improved terminals, longer sidings and double trackage in sections of eastern Kentucky, later reports are to the effect that nothing much will be done this year, due to high costs of material and construction, high money market and difficulty in financing new projects, with rates low and earnings unsatisfactory. The Hazard field today has a production capacity of almost twice the physical capacity of the road to handle, and improvement is needed badly in that field.

## OHIO

**Columbus**—The Southern Ohio Coal Exchange has given out the following figures on car supply in the district for the first three weeks in March: Supply in first week of March—Hocking Valley R.R., 76 per cent; Toledo & Ohio Central R.R., 50 per cent. Supply in the second week in March—Hocking Valley R.R., 71 per cent; Toledo & Ohio Central R.R., 50 per cent. Supply in the third week in March—Hocking Valley R.R., 59 per cent.

## ILLINOIS

**Duquoin**—Coal was recently struck northeast of this city by the Southern Gem Coal Co., under the direction of Jesse Diamond, of Chicago. The Southern Gem people have been doing some extensive drilling throughout this section recently, and this is announced as the first strike of coal in this individual district. The land on which the coal was found lies directly east of Tamaroa, a small town north of here, and the coal is said to be practically of the same quality as the famous Franklin County coal. The seam at this place is six ft. and eight in. in thickness and 469 ft. below the surface.

The Export Coal Co., a newly organized corporation, has announced its intention of erecting a modern coking plant in connection with the mine of the Orchard Coal Co., near Pittsburg, southeast of here. This will give employment to several hundred more men in this district. Coal will also be coked at this plant from many other mines in southern Illinois.

## TEXAS

**Dallas**—According to the officials of the Texas Coal Operators' Association, the mine owners of the state prefer to let the price of coal remain unchanged, rather than to increase the cost of production by raising the pay of the owners as well as the margin of profit, as proposed under the majority report of the wage commission appointed by President Wilson. The Texas operators say, however, that any advance in wages to miners must be taken care of in added cost to consumers, for the coal is now being handled on such a close margin of profit that the operators cannot stand the added cost of production.

In connection with the present coal situation, announcement is made by the Missouri, Kansas & Texas Ry. (the "Katy" system) that it will change nearly all its engines from coal to the oil-burning type. The change is being made, it is announced, because of the increasing demand and growth of scarcity of coal, resulting from the continued demands for higher wages on the part of miners and the resulting strikes and tie-ups of the mines. It is estimated that the change in "Katy" engines will mean discontinuance of the consumption of approximately 10,000 tons of coal a day. This railroad system has recently enlarged and improved its mine at Coalgate, Okla., at an expense of \$50,000. The mine now has a daily capacity of 600 tons and this was to have been doubled by the end of the summer. The change to oil-burning locomotives by the "Katy" will put fully 1,400 coal miners and coal handlers in Texas and Oklahoma out of employment.

## Personals

**Xen Fagan**, formerly manager of the Marion Insulated Wire Co., Marion, Ind., will be the manager of the Rome Wire Co.'s Diamond branch at Buffalo, N. Y.

**W. L. Abbott**, chief engineer of the Commonwealth Edison Co., Chicago, was a recent lecturer at the University of Illinois, Urbana, Ill., speaking from the topic "The Art of Burning Coal."

**Harry Bissell** recently resigned as superintendent of the Cambria Collieries Co., at Bellaire, Ohio, a George M. Jones interest. He is now superintendent of the Simpson Creek Coal Co., at Simpson, W. Va.

**R. E. Roush**, general manager of the West Virginia-Pittsburgh Coal Co., has resigned, announcement to that effect having been made during the second week of March. D. F. Bird, assistant manager, has also tendered his resignation.

**J. W. Sidell**, who has been superintendent of the Harco mine of the Harrisburg Colliery Co., in Saline County, Ill., has tendered his resignation, effective April 1. Mr. Sidell retires to take a much needed rest.

**W. H. Burke**, for the past five years fuel agent for the Illinois Traction System, the largest electric railway in the state of Illinois, has been appointed fuel agent of the Frisco Railroad with headquarters in St. Louis.

**C. D. Boyd**, traffic manager for the Southern Appalachian, Harlan and Hazard operators associations, has been in Washington, D. C., attending the public transportation hearing, at which railroads, shippers, and so on, have been airing their views on transportation matters.

**Joseph Shimmell** resigned as assistant mine foreman with the Carnegie Coal Co., at the Atlas mine, Atlasburg, Pa., and accepted a position as mine foreman for the W. H. Shinn Coal Co. at Joffre, Pa. Both of these operations are in Washington County.

**J. W. Sidell**, superintendent of the Harco mine near Harrisburg, Ill., owned by the Harrisburg Colliery Co., recently resigned from active business life. He has been associated with the company many years. No successor has as yet been appointed to fill the vacancy.

**Oral L. Garrison**, formerly of Marion, Ill., recently received an appointment as private secretary to John L. Lewis, president of the United Mine Workers of America, and will have his headquarters in Indianapolis, Ind. This position will carry him into practically every mining district in the United States and probably some fields in Canada.

**George W. Vaux** has resigned as general manager of the Zeigler Coal Co., at Zeigler, Franklin County, Ill., and has gone to Toronto, Canada, where he has accepted a position as general agent of the Union Pacific, Oregon Short Line and the Oregon-Washington R.R. & Navigation Co. Mr. Vaux held this position prior to the gov-



ernment taking over the railroads in May, insulated wire, calling special attention to the Hazard method.

**Ralph D. Brown**, who has been with the O'Gara Coal Co., in Harrisburg, Saline County, Ill., for ten years as chief engineer has been made general superintendent of this company, succeeding **A. B. McLaren**, who recently resigned. **Dennis B. McGehee**, formerly chief clerk and assistant to the general superintendent of this company, which position he has held for a number of years, has been made assistant to the vice president, and will have charge of the accounting department, workmen's compensation, taxes and the lands of the company.

**Joseph Lewis** has been made general superintendent of the Chicago, Wilmington & Franklin Coal Co.'s mines in Franklin and Williamson counties, Illinois, taking the position made vacant by the death of **Thomas F. Holmes**, several weeks ago. Mr. Lewis has been superintendent of the Orient mine of this company since its development, and has been with the company many years. He is one of the competent mining men of the southern Illinois field. The Orient mine holds the world's record for single-car hoisting, having hoisted 6,008 tons in eight hours. Mr. Lewis will have headquarters in Benton, Illinois, where the company maintains general offices.

**B. F. Nigh**, secretary of the Michigan-Ohio-Indiana Coal Association, should be given credit for the wording of the recommendation in the recent report of the U. S. Bituminous Coal Commission where it asks the public, and especially the large users, to lay in their winter's supply of fuel between April 1 and August 1. In many ways it is said the recommendation follows almost verbatim a recent letter written by Mr. Nigh to the coal commission calling attention to the fact that many users, especially public utilities and public institutions, have not been in the habit of storing coal during the summer months, when such should be done.

**George H. Cushing**, managing director of the American Wholesale Coal Association, is making a speaking tour during which he is discussing the current problems confronting the coal industry. His itinerary is as follows: Toronto, Can., April 8; Grand Rapids, Mich., April 9; Kansas City, Mo., April 12; Omaha, Neb., April 13; Chicago, Ill., April 15; New York, N. Y., April 20. His New York speech will be before the Purchasing Agents' Association.

## Obituary

**Captain Darwin G. Case** died at his home 466 Fifty-fifth St., Brooklyn, N. Y., on March 27. Captain Case was a large owner of coal barges and had a wide acquaintance in the transportation and coal circles of New York City.

**Stewart W. Calder**, 40 years of age, assistant to the president of the Kentucky River Coal Corporation, died of pneumonia on March 22. Mr. Calder came to Kentucky from Norfolk, where he was with B. A. Langhorne, of Lynchburg. He had resided at Lexington, Ky., for five years prior to his death.

**Melvin B. Newcomb**, aged 31 years, chief engineer of the Rubber Machinery Department of The Wellman-Seaver-Morgan Co., died recently after a short illness, at his home in Akron, Ohio. He received his mechanical engineering education at the University of Wisconsin. Mr. Newcomb has been engaged in engineering work with various industrial concerns. He joined the Wellman-Seaver-Morgan Co. in January, 1918. He leaves a wife and two young daughters.

## Trade Catalogs

**Pratt Ballast Cleaner.** The Link-Belt Co., Chicago, Ill. Folder. Pp. 4; 6 x 9 in.; illustrated. Gasoline engine operated machine.

**Metallurgical Service.** New York Testing Laboratories, 80 Washington St., New York, N. Y. Folder, Pp. 4; 4 x 9 in.; illustrated. Announcement.

**Simplex Track Jacks.** Templeton, Kenly & Co., Ltd., Chicago, Ill. Bulletin 820. Details improvements in a track jack of interest to track maintenance men. Pp. 4; 8½ x 11 in.; illustrated.

**Rubber Insulated Wire.** Hazard Manufacturing Co., Wilkes-Barre, Pa. Booklet. Pp. 16; 3½ x 6½ in.; illustrated. A general description of the manufacture of rubber

**Carrick Combustion Control.** Carrick Engineering Co., 538 South Clark St., Chicago, Ill. Pp. 10; 8½ x 11 in.; illustrated. Some facts about power-plant control and description of the device made by the Carrick company for combustion control.

**Power Factor Recording Instruments.** The Esterline Co., Indianapolis, Ind. Bulletin 395. Pp. 16; 8½ x 11 in.; illustrated. A graphic recording instrument. Fundamental considerations and causes of low-power factors; prevention and correction. Description of instruments.

**Superheated Steam in Industrial Service Plants.** Bulletin T-3 and T-4, respectively. **Superheaters for Stationary Power Plants.** Bulletin T-5. Pp. 8. These three bulletins are all 8 x 10½ in. in dimension and are illustrated. They are distributed by the Locomotive Superheater Co., New York, N. Y. Bulletins T-3 and T-4 describe the application of the Elesco fire-tube superheater to steam shovels. Bulletin T-5 covers the advantages of superheated steam from a new point of view.

## Industrial News

**Cullman, Ala.**—The capitalization of the Stouts Mountain Coal Co. has been increased to \$200,000 to allow for general business expansion.

**Youngstown, Ohio**—The Uniontown Coal Co. has been incorporated with a capital of \$15,000, by Louis S. Baldwin, Arthur M. Lyon, R. H. Kallmerten, Helen E. Jones and J. H. C. Lyon.

**Syracuse, Ohio**—E. H. Holmes, president of the Brocals Chemical Co., of Indianapolis, Ind., will soon establish a branch office in Columbus to look after the development of a tract of about 600 acres of coal land near this place.

**New York, N. Y.**—The Hyatt Roller Bearing Co. announces that its new office location is Sixth Ave. at 41st St., New York City. All letters, telegrams and other communications for the Hyatt company, should be addressed to this location.

**Nelsonville, Ohio**—Holderman & Nelson, of this place, has purchased the lease on what is known as the Globe mine No. 3, on the Hocking Valley near Nelsonville and will operate in the future. The lease was formerly held by the Globe Coal Co.

**Logan, W. Va.**—The McCall Coal Co. has been incorporated with a capital of \$500,000 to engage in the development of coal mining properties in the Logan district. J. C. Sullivan, Tralee, W. Va., is named as the principal incorporator.

**Charleston, W. Va.**—In connection with the purchase of the mines of the Monte Coal Co., on Coal River, the Buffalo-Thacker Coal Co. has increased its capital stock from \$550,000 to \$1,000,000. L. R. Reese, of Huntington, is the president of the company.

**Huntington, W. Va.**—A \$100,000 tippie and washery is to be built by the Thomas Coal Co., of Bramwell, W. Va., one of the large companies operating in the southern smokeless field of the state; contract for the construction of the tippie having been awarded to the Stevens-Adamson Co.

**Montgomery, Ala.**—Carl T. Montgomery and associates are understood to be having plans prepared for the installation of machinery and equipment in connection with the proposed development of a total of about 1,000 acres of coal properties located in Mercer County, W. Va.

**Stamford, Conn.**—The Yale & Towne Manufacturing Co. has moved its general offices from 9 East 40th St., New York City, to Stamford, Conn., where all company communications should be addressed. This move effects a consolidation of the company's selling organization with the factory.

**Logan, W. Va.**—Extensive developments of coal and timber lands in this region are proposed by W. C. McCall and associates, all of Logan. The McCall Coal Co. has been chartered with \$2,000,000 to undertake the enterprise. H. A. McAllister, J. R. Slack and W. H. Lilly are among the incorporators.

**Petersburg, Ind.**—The Big Four railroad is arranging to build coal yards in this city and sufficient trackage will be laid to accommodate 1,000 coal cars. Coal trains will be made up at Petersburg and a number of train crews will be held here.

From two to three train crews are held here now.

**Philadelphia, Pa.**—The Brown Instrument Co., of this place, announces that the company is erecting two new buildings, one for the manufacture of recording thermometers, and second a research department, at a cost of \$100,000. These facilities will enable the company to materially increase the output of Brown pyrometers and recording thermometers.

**Columbus, Ohio**—The Queen Shoals Collieries Co., has been incorporated with a capital of \$150,000 to develop a large tract of coal land in West Virginia. The incorporators are D. H. Armstrong, William A. Lama, E. B. Hughes, M. R. Weltner and R. M. Snetzer. The company will complete its organization by the election of officers within a short time.

**Cleveland, Ohio**—Word has been given out that the Lake Ore & Coal Exchange, which has been operated with headquarters at Cleveland, under the charge of H. M. Griggs, will be continued by the railroad officials of the interested coal-carrying lines. The exchange has jurisdiction over Lake movements at all of the Lake Erie docks and ports.

**Charleston, W. Va.**—Capitalized at \$75,000 the Mountain Eagle Collieries Co. has been organized to mine coal in Big Sandy district of Kanawha County adjacent to Elk River. Leading figures in the organization of the corporation were: Harold P. Tompkins, W. A. Alexander, S. V. Morris and P. H. Holman of Charleston; Lee Stone, of Lexington, Ky.

**New York, N. Y.**—Announcement has been made that the Sheridan-Wyoming Coal Co., Inc., a subsidiary of United States Distributing Corporation, has just completed a contract for the sale, to a large Western trunk line railroad, of 600,000 tons of coal per annum for a period of 7½ years. The contract is on a cost plus basis, and is said to be one of the largest ever placed.

**Nelsonville, Ohio**—E. W. Coyle, manager of the Southern Ohio Coal Co., of Columbus, has purchased the stock of the Meeker Run Coal Co., of Nelsonville, which operates a mine on the Hocking Valley. The purchaser will operate the mine. The property consists of about 1,000 acres of virgin coal lands and in addition a considerable acreage of pillars and worked-over land which will produce a fair amount of coal.

**Morgantown, W. Va.**—The program of improvements of the Penn-Mary Coal Co. for the next year contemplates the expenditure of \$1,000,000 on the various plants of the company in the counties of Monongalia and Preston, West Virginia. Until last October the Penn-Mary company, or what it now represents, was the Elkins and Coke Co. At that time the Elkins estate sold the company to the Bethlehem Steel Corporation. Since then many improvements have been made at different plants, so that the \$1,000,000 to be expended is in addition to improvements already made or under way. While the improvements will be made largely with a view to securing a larger production, yet the company also expects to build a large number of miners' dwellings, and to improve the community life generally at its several plants. The maximum output of the seven mines of the company under the old ownership was 750,000 tons a year. Plans made call for increasing the maximum to 1,500,000 tons a year. However it will not be possible to complete all improvements within the period of a year. Within recent months the company has purchased and put in service, seven 5-ton locomotives and 12 new mining machines. Among other improvements to be made is the construction of a large tippie at the Richard mine, the tippie there having been destroyed by fire several months ago. A large storage bin is also to be constructed.

**St. Louis, Mo.**—The Medart Patent Pulley Co., Inc., of this place, was founded 40 years ago with the Medart steel-rim pulley as the nucleus. Since that time the company has concentrated on the mechanical transmission of power, and today the name Medart is synonymous with everything in line-shaft equipment. Pulleys constitute but a small percentage of total production, which embraces a complete line of the many devices used in power transmission.

**Fairmont, W. Va.**—The Forest Coal Co. has been launched by Fairmont people, and is capitalized at \$200,000. The new concern will have its principal operations in Marion County. Associated in the preliminary organization of the company were: S. D. Brady of Fairmont, well known in the Marion field; A. P. Brady, H. E. Engle, E. M. Showalter and H. W. Showalter.



**Knoxville, Tenn.**—The Rich Mountain Coal Co. has filed articles of incorporation with a capital of \$75,000 to engage in general coal mining operations in the Knoxville district. H. G. Croley, T. P. Wither- spoon, and H. B. Lindsay are the incorporators.

**Charleston, W. Va.**—Pennsylvania coal operators will organize a \$5,000,000 corporation for the development of coal land in Monongahela County. They have chartered the Connellsville Big Vein Coal Co., of Point Marion, Pa., to undertake the enterprise. The incorporators are A. A. Arison, of Point Marion; D. H. Horton, of Connellsville, Pa.; J. L. Kendall, of Pittsburgh; J. L. Kendall, of Cheat Haven, Pa.; S. A. Kendall, Washington.

**O'Fallon, Ill.**—A charter was recently granted the O'Fallon Coal Co., of this place, the purpose of the company being to develop and operate bituminous coal mines, the sale of coal and acquiring options and leases for mining purposes. The capital stock was announced at \$1,000,000. The incorporators of the company are: C. G. Omstead, Samuel Meister, E. C. Warren, Wm. A. McDonald, P. C. Pardee, W. S. Fetheringham, Frederick Mohr and A. W. Black.

**Louisville, Ky.**—G. C. Atkinson, president of the St. Bernard Mining Co., Earl- ington, Ky., was in Louisville for several days during the week, following a trip to the Nashville properties. While in Louis- ville he visited the Louisville & Nashville offices, in an effort to secure a better car supply. The company mines on the Louis- ville & Nashville lines are working about 45 per cent of capacity; while those on the Illinois Central, are working on quite a fair basis, but loading out considerable coal for the railroad.

**Huntington, W. Va.**—The Overseas Coal Corporation, with headquarters in this city, has been organized with a capitalization of \$50,000 to mine coal in four counties of West Virginia—Cabell, Lincoln, Logan and Boone. Most actively identified with the new company are: J. W. Feague, John S. Marcum, J. R. Marcum, C. P. Marshall, Jr., H. K. Fox, all of Huntington. The same people have also organized the Westkole Fuel Co., with a capitalization also of \$50,000, and also for the purpose of oper- ating in the counties already named.

**Cumberland, Md.**—The Georges Creek Coal Mining Co. is having plans prepared for extensive operations at its coal prop- erties to provide increased capacity. It is proposed to abandon the use of the steam shovels now in operation, and commence at once on the development of numerous drift openings, including the driving of en- tries to reach coal in the vicinity of the Jackson workings. The company has recently concluded negotiations for the acquirement of the property formerly held by the Green Coal Co., adjoining its site.

**Akron, Ohio.**—The Goodyear Tire & Rub- ber Co., of this place, has acquired a large acreage of coal land in Belmont and Har- rison counties, together with the going op- erations of the Somers Coal Co. In those counties, the sale having been consummated about the end of March. The sale price of the mines and holdings of the Somers Coal Co. is said to have been \$385,587.96. It is proposed by the rubber company to enlarge the scope of operations by opening a new mine and establishing a new town, of which the mine will be the nucleus.

**Williamson, W. Va.**—The Tug Valley Fuel Co., organized by local business men with a capital of \$50,000, will deal in the output of the Williamson field, having already closed several large contracts cov- ering export shipments. The company, in addition to acting as a fuel agency, also operates its own mines. The incorporators of the company were P. A. West, E. L. Bailey, J. T. Johnson, W. P. T. Varney and Dr. W. M. York. P. A. West, formerly weighmaster of the Norfolk & Western, at Portsmouth, has been selected as manager of the company with headquarters in Williamson.

**Fairmont, W. Va.**—Authorized under its charter, just secured, to engage in the mining of coal and the manufacture of byproducts, it is believed that the Ayr- shire Corporation of Pittsburgh, a non- resident corporation with \$100,000 capital- ization, will have quite extensive operations in the Marion field before long. No defi- nite plans have so far been announced. Under this charter it is authorized to hold and control 22,000 acres of coal land in West Virginia. The incorporators of the company are: Laurence T. Saunders, Samuel McClay, L. Raymond Martin and John A. Irwin, all of Pittsburgh, Pa.; Wil- liam Seifert of McKeesport, Pa.

**Lester, W. Va.**—The Neale Coal Co., which recently filed articles of incorpora- tion with a capital of \$25,000, is arrang- ing plans for the immediate development of coal properties in the vicinity of Lester, Raleigh County. Equipment for all features of operation will be installed. E. L. Bowl- ing, E. V. Neale, and J. W. Lester, all of Lester, and A. M. Herndon and E. E. Hart- sook, Goodwill, W. Va., are the incorpor- ators.

**Bridgeport, Conn.**—The Curtis & Curtis Co., of this place, manufacturers of the Forbes pipe threading and cutting machine, is one of the few concerns in this city to receive a "Certificate of Merit" from the War Department for the company's patri- otic service during the war. This citation is expressly for "making prompt deliveries and otherwise co-operating with the Con- struction Division of the Army." During the war Forbes pipe threading and cutting machines were supplied for pipe- fitting work in the cantonments, battle- ships and navy yards.

**Huntington, W. Va.**—Largely to replace equipment destroyed during the ice jam of 1917-1918 in the Ohio River, the Island Creek Coal Co. has taken over the river equipment of the Pittsburgh Coal Co., pay- ing for such equipment approximately \$500,000. Announcement of the sale was made here during the week ended March 27. Included in the equipment purchased were steamers, barges and repair docks heretofore located at Burlington. However, the purchasing company is having the repair dock moved to Coal Haven, Ky., and rebuilt there.

**Huntington, W. Va.**—The W. E. Deegans Consolidated Coal Co., which recently filed articles of incorporation with a capital of \$5,000,000, has perfected its organization and is planning for active operations at an early date. The company has acquired under lease a total of about 15,000 acres of West Virginia and Kentucky coal properties, and is having plans prepared for the installation and operation of a total of ten mining plants. Modern ma- chinery and equipment for all features is planned, and electric power for operation will be arranged for wherever possible.

**Peoria, Ill.**—The Peoria, Hanna City & Western Ry. has petitioned the Illinois Pub- lic Utilities Commission for authority to issue \$125,000 in capital stock. The rail- way is four miles long and runs from Hollis Junction, a mile and a half west of this place and then up to Le March Creek, where the Newsam Brothers and the M. E. Case mines are located. The road was built to carry coal from the mines, and the capital stock is to be issued to pay the cost of building the road. The stock in the road is owned by the Newsam Brothers and several other stockholders.

**Charleston, W. Va.**—Recent details learned in connection with the organization of the Callan Coal Co. indicate that this concern will develop about 300 acres of coal land on Campbells Creek near Dana in Kanawha County. As the tract is a small one, the daily capacity will be limited to about 350 tons per day. However the property will be immediately developed. Officers of the Callan company just elected are: A. D. Calahan, of the Logan field (operating mines in that field), president; P. E. Gallagher, secretary.

**New York, N. Y.**—The United States Dis- tributing Corporation, of this City, has announced that under a contract recently consummated, the Peabody Coal Co., which is operating the mines of the Sheridan- Wyoming Coal Co., Inc., a subsidiary of the United States Distributing Corporation, has become responsible for the sale of the entire output of the Sheridan mines. By this arrangement the United States cor- poration replaces the six selling organiza- tions previously maintained for the several mines involved with resulting substantial savings to the Sheridan-Wyoming Coal Co., Inc.

**Clarksburg, W. Va.**—The Peacock Coal Co., organized by Clarksburg people, has elected officers and arranged to develop a tract secured on March 27. The officers of the company are: Olandus West, pres- ident; J. Hornor Davis, vice-president; P. M. Robinson, treasurer; Carl Hornor, general manager; E. B. Templeman, secretary. The Peacock Coal Co. closed a deal with the Fairmont Big Vein Coal Co. for the pur- chase of a tract of coal land near Nor- wood, W. Va., on Nutters Run. Develop- ment work on the newly acquired prop- erties will begin at once and within a short time the company expects to produce coal.

Headquarters of the company are in this city.

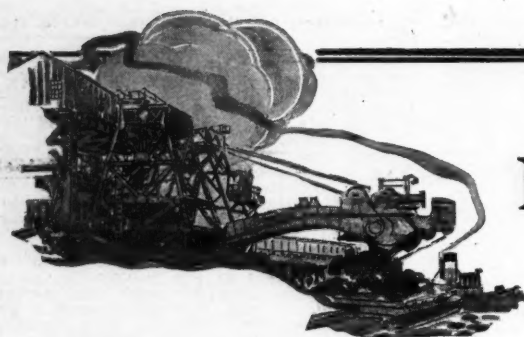
**Fairmont, W. Va.**—The Laurel Hill Coal Co. has completed negotiations for the pur- chase of the plant and holdings of the Byer Coal Co., located near Philippi, Bar- bour County, W. Va. It is understood that the new owner is arranging plans for im- proving and enlarging the plant, with con- sequent increase in production. Included in the property is a tract of about 400 acres of Kittanning coal. J. E. Gaskill and Howard I. Connors, Fairmont, are prominent in the company.

**Kingston, W. Va.**—Production will be largely increased by the Solvay Co., at its plant at this place, through the opening of a mine in the Powellton seam. The company for some time has been develop- ing the Eagle seam. The Powellton seam here is about 150 ft. vertically above the Eagle seam, and it will be necessary to construct an incline, 1,200 ft. of railroad track and a headhouse. Under present plans it is also proposed to build a stor- age bin of about 100 tons capacity. Exten- sions and improvements are to be made to the company's power house so as to pro- vide for the additional load required. As many more miners will be employed, it will be necessary to construct about 100 new dwellings for miners.

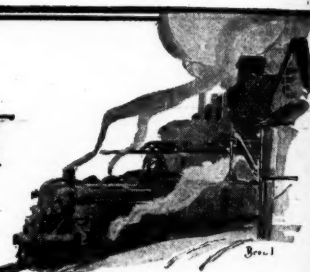
**Chicago, Ill.**—Announcement is made that the general offices of the Chicago Pneumatic Tool Co., of this place, were transferred on March 31, to the Chicago Pneumatic Building, a new 10-story struc- ture erected for the exclusive use of the company at the corner of 44th St. and Fifth Ave., New York City. This move was accomplished without appreciable in- terruption to business; arrangements were so carefully planned in advance that the jump of this large organization, across half of the continent, was made with practically no interference to the normal routine of business. The Chicago district sales branch of the company, previously in the Fisher Building, has been moved to commodious new quarters at 300 North Michigan Boulevard. The Chicago service branch of the company, formerly at South Dearborn St., has been consolidated with the sales branch at the new address. Both departments will be under the direction of J. L. Canby, as district manager.

**New York, N. Y.**—Of general interest is the combination recently announced of the organization of Westinghouse, Church, Kerr & Co., Inc., engineers and constructors, of New York, and Dwight P. Robinson & Co., Inc., constructing and consulting engineers of New York. The new company will be called Dwight P. Robinson & Co., Inc., and will occupy executive offices at 61 Broadway, and the engineering and designing offices in the Grand Central Palace, 125 East 46th St., New York. Dwight P. Robinson, the president of the new company, was for many years president of the Stone & Web- ster Engineering Corporation, and formed his own company in 1918. He has had an unusually extensive experience in the design and construction of industrial plants, the Stone & Webster company specializing in work of this nature. The Westinghouse, Church, Kerr & Co., established 36 years ago—has also specialized in the design and construction of industrial plants of all kinds. In a way the activities of the two companies are largely supplemental, each making its own specialized contribution to the new company.

**Charleston, W. Va.**—During February 14 new companies were organized in West Virginia, the combined capital of all such companies being \$6,465,000. Besides the new companies formed, 15 coal companies already in existence increased their capital stock to the extent of \$2,500,000. The principal companies formed were as follows: Prowagstep Coal & Coke Co., of Cleveland, capital \$200,000; W. E. Deegans Consolidated Coal & Coke Co., of Hunting- ton, capital \$5,000,000; Meadow Creek Coal Co., of Charleston, capital \$100,000; Dear- born Coal Co., Stonewall, W. Va., \$125,- 000; Little War Creek Coal Co., of Tralee, capital \$500,000; Hooper Mankin Fuel Co., Huntington, capital \$100,000; Tygarts River Coal Co., Philippi, \$150,000. The prin- cipal companies in the state increasing their capital stock follows: American Fuel Co. to \$2,500,000; Kanawha & Hocking Coal & Coke Co. from \$3,500,000 to \$5,000,000; Alvah Coal Co. to \$250,000; Flat Top Fuel Co. to \$200,000; Wolf Summit Coal Co. to \$750,000; Cadle Ridge Coal Co. to \$100,- 000; Rich Black Coal Co. to \$150,000; Rhodell Coal Co. to \$200,000; Ivy Branch Coal Co. to \$100,000; West Virginia Eagle Coal Co. to \$150,000; Lewiston Block Coal Co. to \$150,000; American Eagle Colliery to \$800,000; Chaplin Collieries Co. to \$400,000.



## MARKET DEPARTMENT



### Weekly Review

*Freedom from Control of Bituminous Brings with It Sharp Advance in Prices—Many Buyers in the Market—Few Contracts Closed—Car Supply Still Hovers Around 50 Per Cent Mark—Coke Prices Advance Considerably*

**G**REAT interest has been manifested during the past week in regard to the new prices that will become effective with the return to freedom from control in the bituminous-coal industry. The coal market has been in an excited condition and prices have advanced at a great pace. It is to be feared that the development of a steady market is still far off.

Some of the larger operators set out with a determination to hold their prices to conservative limits, but in few instances were these limits adhered to. This was due largely to the eagerness of the smaller operators to sell at the highest prices bid. Taken as a whole, there was not much contract business transacted.

Buyers were in the market in large numbers, but they were in there apparently to obtain quotations only. Large consumers did not seem to be in a hurry to refill their bins with spot coal. They preferred to wait until contract business could be transacted.

Production of both bituminous and anthracite did not show any marked increase. Some of the mines in the anthracite region that were affected by floods and were forced to shut down have not yet resumed operations.

In the Pittsburgh district a level seems to have been found for coking coal, which was selling for \$4.50 and quite a number of small-lot sales have been consummated. The steel interests have been the principal buyers, as their needs are greatest and they are in the best position to pay fancy prices. \*An additional price of coal is but a small item if by paying it the production of steel is thereby increased.

Coal-car supply is not as satisfactory as could be desired. It hovers about the 50 per cent mark, but in the district around Pittsburgh it has fallen as low as 40 per cent. In southern Kentucky also a poor car supply is reported, the Knoxville division of the Louisville & Nashville reporting the extremely low figure of 9.8 per cent. Under such unfavorable conditions labor is deserting mine work.

In Missouri, Iowa, Nebraska and southern Illinois it is interesting to note that the opening prices on Pocahontas coal are almost prohibitive. As a result the retail trade in the states mentioned has turned to Oklahoma smokeless fuel, which the retail dealers consider as good, if not better than the West Virginia product.

The coke market opened with considerable vigor during the past week, at prices far above the Government price limits. Coke has advanced on an average about a dollar a day, but such conditions cannot last long, and a reaction seems inevitable. The market should stabilize at some reasonable level. With an average improvement in car supply in the coke region of about 10 per cent, the production rose to 254,552 tons, the highest point for the year to date.

At Norfolk and Newport News dumping proceeds slowly and for a full fortnight in March, coastwise steamers were on demurrage, as high as \$2 per ton having been paid. Export business continues under permit.

#### WEEKLY PRODUCTION

The weekly report on the production of bituminous coal, anthracite, and beehive coke, compiled by the Geological Survey, Department of the Interior, April 3, 1920, states that the production of soft coal during the week ended March 27 increased 5.5 per cent. Preliminary estimates place the total output (including lignite and coal made into coke) at 10,914,000 net tons, an increase of 568,000 tons over the preceding week.

The cumulative production since the beginning of the year is shown in the following table with comparative figures for the three years preceding.

|           | Production First 74 Working Days |
|-----------|----------------------------------|
| 1917..... | 133,466,000                      |
| 1918..... | 130,530,000                      |
| 1919..... | 104,202,000                      |
| 1920..... | 130,658,000                      |

The year 1920 is thus about 2,800,000 tons behind 1917, but is slightly ahead of 1918, and leads its immediate predecessor, 1919, by 26,450,000 tons.

Shipments of anthracite by the nine principal carriers—in part estimated—amounted to 36,394 cars during the week ended March 27. Allowing for mine fuel and sales to local trade, this indicates a total production of 1,869,000 net tons, an increase of 312,000 tons, or 20 per cent, over the preceding week.

The cumulative production of anthracite from the beginning of the coal year to March 27, 1920, amounted to 87,766,000 net tons. During the corresponding period last year it was 92,360,000 tons. With only three working days remaining, production for the current year is thus about four and a half million tons short of that of the year 1918-19.

An increase of 7 per cent in the production of beehive coke during the week of March 27, is indicated by the shipments over the 26 principal coke-originating roads. The total output is estimated at 501,000 net tons, as compared with 467,000 tons during the preceding week. This was the largest tonnage reported in any week since February, 1919.

The cumulative production since the beginning of the year is now 5,494,000 tons. Compared with the corresponding period of 1919, this is a decrease of 392,000 tons, or 7 per cent.

#### Atlantic Seaboard

##### BOSTON

Embargoes interfere with shipments. Movement improves very slowly. Spot prices firm and hard to control. Fewer contract offerings. Active demand at piers. Despatch again slow at Hampton Roads. Anthracite retail prices advance. Steam sizes in less request.

**Bituminous**—The New York Central embargo against the Boston & Maine and against the Boston & Albany has effectually shut off practically the whole of New England, so far as concerns coal either originating on or moving via that line to the all-rail gateways. Steam coal emanating on the Pennsylvania can reach certain points, either via the New York, New Haven and Hartford or the Boston & Maine except that the Delaware & Hudson was embargoed by the Boston & Maine on March 29.

The New York Central embargo placed on March 25 is now expected to be lifted by April 5. The trade certainly hopes so, for there is increasing anxiety over the failure to get coal forward for April and May needs. The larger buyers, especially, are worried; an embargo of this kind, due to congestion because the Boston & Maine in particular is short of motive power, is regarded only as a forerunner of other and perhaps more serious traffic difficulties later on.

The differential is so much in favor of the all-rail route that there is bound to be a great effort on the part of consumers, railroads included, to get coal through channels from central Pennsylvania. Undoubtedly, there will be frequent tie-ups because of railroad congestion.

Coal that was started prior to March 26 is coming through reasonably well, although the improvement is anything but rapid. There are hundreds of cars now reaching destinations that were shipped



around Jan. 15, certainly a record for slow movement into New England. Less is heard from confiscations, although there are rumors that the railroads intend to buy very sparingly for the present, relying upon their power of seizure in case they need coal before prices have receded.

The fact that shipment is now restricted so largely to coals originating on the Pennsylvania has led to what might almost be described as a buoyant market for spot coal. Poll 9 coals have been offered at as high as \$4.75 per net ton, but takers have been few. Coals of medium grade are ranging from \$4@4.25, although there is a growing feeling among the more far-sighted operators that it would be a mistake to allow prices to soar. Under the award of the Coal Commission the prices quoted afford a handsome return in most cases, and it would be poor policy to invite new and drastic legislation this coming season.

At the same time there are the greedy few who want to reap while the harvest is good. They form the element that is extremely difficult to control. The attitude of several of large anthracite-producing companies in favor of granting their men a retroactive advance from April 1, but at the same time withholding any advance in price to the trade until the wage increase is agreed upon, is an instance of greater breadth of mind.

There have been distinctly fewer contract offerings the past week. The quality grades, or so much of the tonnage as could be saved for this territory, have now been placed, and buyers are not yet interested in buying the cheaper grades. There is also the feeling that if coals of lower quality will have to be bought the market will be more favorable to the buyer in July than it is now.

All grades are in good request at the Philadelphia and New York piers. The New York Central embargo has resulted in better movement to New York, but the market is readily absorbing all that comes down. On Long Island Sound there is an active market. From Hampton Roads, as well as all-rail, deliveries have been interrupted and were the weather colder there would be a great deal of anxiety over light stocks that are now the rule. Textile and other manufacturers are so prosperous that they will take no chance of shutting down and they are willing in most cases to pay the prices asked.

At Norfolk and Newport News despatch is still very slow. For a full fortnight in March coastwise steamers were on demurrage, as high as \$2 per ton having been paid. This makes the on-cars price at Providence or Boston very close to \$12. The retail price in Boston is now \$11.75, and retailers acknowledge that at this rate per net ton this price is not adequate to cover costs. A strike of clerks on the Norfolk & Western has also had its effect on movement. Despatch is now from five to eight days at all the piers.

**Anthracite**—Domestic sizes continue in very strong demand. Even at higher barge freight rates retail dealer is bringing the strongest kind of pressure to get coal. Shipments have slowed up materially the past few days, dumpings at Philadelphia and New York having suffered because of car supply. All-rail the New York Central embargo has cut off several large sources supply and there is much anxiety over the outlook for April.

Meanwhile, the public is clamoring for next winter's fuel and even advanced prices do not lessen the demand. Effective April 1 Boston retail prices on egg, stove, and chestnut were increased \$1, making the new price \$14.50 per net ton delivered. In Providence, R. I. the new price is \$15 including housing, and in Portland stove coal was fixed at \$16.

Less is heard from the steam sizes. With what seems to be an increased opportunity to get bituminous there has been less inquiry for steam anthracite. This is only natural and could have been foreseen. At the same time the producing companies apparently have an ambition to advance the price on these coals.

#### NEW YORK

Retail dealers have not advanced prices. Buyers swarm the coal fields and bid against themselves. Bituminous market strenuous. Demand strong with supplies short. Operators endeavoring to keep prices down.

**Anthracite**—The situation remains strong and domestic coals are in heavy demand and while the supplies have been coming forward in fair shape there is not much free coal on hand. Wholesale dealers are heavily booked, some producers being sold ahead for several weeks.

Receipts have not been anywhere near normal because of the suspension on April 1 to celebrate the eight-hour day, and Good Friday, but the tonnage produced on the days the mines were operated show that the miners will follow the advice of their leaders and play their part in keeping up the output during the wage conferences.

Not all of the mines effected by the floods of several weeks ago have been restored to normal conditions and as a result tonnage remains below normal.

There has been no general announcement made as to what all the big producing companies will do with regard to billing coal sold after April 1, while the wage conferences are unfinished; that is whether it will all be billed at the regular winter prices or whether it will be sold subject to the new price to be fixed, inasmuch as the wage agreement is to be retroactive.

The retail dealers in this city have not changed the prices in force during the winter and are not likely to do so until the wholesale prices are altered. Most of the retailers in accepting orders for future delivery do so with the understanding that the coal is billed at the price current at time of delivery.

Demand for the domestic sizes is strong. Stocks with the retail dealers are not large and they are delivering steadily to their customers. Some dealers are employing extra trucks.

While the majority of independent operators are sticking closely to the 75c differential there are reports that some of the small operators are quoting as high as \$9 at the mines. The mining regions are being constantly visited by buyers who are bidding against themselves and forcing higher quotations.

Steam sizes continue in good demand, the call for buckwheat being due in good part to the lack of bituminous. Rice is strong but the demand for barley is easier. One of the big producers has already announced increases in price of 35c for buckwheat; 50c for rice and 25c for barley, making the mine prices \$3.75 for buckwheat; \$3.25 for rice and \$2.50 for barley. No announcements have as yet come from other big producers. Independent product is in heavy call with quotations in some instances about 25c higher than the company figures.

Current quotations for company coal per gross ton at mine and f.o.b., tidewater, at the lower ports are as follows:

|                | Mine      | Tidewater |
|----------------|-----------|-----------|
| Broken.....    | \$5.95    | \$7.80    |
| Egg.....       | 6.35      | 8.20      |
| Stove.....     | 6.60      | 8.45      |
| Chestnut.....  | 6.70      | 8.55      |
| Pea.....       | 5.30      | 7.05      |
| Buckwheat..... | 3.40@3.75 | 5.15@5.50 |
| Rice.....      | 2.75@3.25 | 4.50@5.00 |
| Barley.....    | 2.25@2.50 | 4.00@4.25 |
| Boiler.....    | 2.50      | 4.25      |

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

**Bituminous**—With the wage conferences ended and the operators knowing what the increases are going to be the bituminous situation has been clarified to a certain degree. The return of the industry to private control on April 1 did not cause any stir, the move having already been discounted.

There are as many different quotations heard as there are sizes of coals. Shippers have no great amount of coal to spare and in most cases the quotations given are subject to change within a few hours.

Buyers are around in large numbers and it is apparent that the quotations obtained are on a secondary consideration, with the result that they bid the market up among themselves.

Notwithstanding this effort on the part of some buyers to get coal at any prices no exorbitant quotations are heard and the great bulk of free coal obtainable is moving at fair prices considering the situation.

Many more contracts have been reported as closed and it is now thought that most operators have gotten all of this kind of business they want for this year. Many producers look forward to a good brisk market in free coals this summer and with better prices than now obtainable.

The producers are doing their best to keep prices within bounds when the high cost of production is considered. It has been pointed out that with the new wage scale in effect coal selling at \$3.75 per ton will net the producer about the same as he received when the government maximum price of \$2.95 was in force.

Quotations were numerous and varied during the couple of days last week following the removal of Federal control and

shippers were not anxious to make them because of the uncertainty of deliveries. For Latrobe coals quotations of \$4.25 were reported while Connellsville coal was quoted about 25c. higher. Good Central Pennsylvania coals ranged from \$3.75@4.

#### PHILADELPHIA

**Anthracite demand without limit. Retailers besieged with orders. Tonnage cut down by holidays. Increase in steam sizes fails to affect demand. Bituminous eagerly sought after. Government price off.**

**Anthracite**—The strongest kind of demand exists for practically all the anthracite sizes. The decision of the miners to work after April 1 was thought likely to produce some cessation of ordering on the part of the consumers, but the contrary seems to be true. The fact that the companies decided to make all shipments up to the time of deciding upon the wage scale at the circular prices in effect all winter, has stirred the buyers to the point that they are besieging the retailers to take their orders.

The retail men are almost a unit in refusing to take business far in advance at a price, for the manner in which the companies announced the continuance of the present schedule leads to the opinion that the issuance of a new circular will come without further warning. This may be a few days, a week or maybe a month, although it is not thought generally it will be deferred beyond the end of the present month.

Most dealers do have a good tonnage of pea on hand, but are sending out more of this size than they are receiving. It would appear that users of this size who have not been accustomed to store it away are making efforts to put in a few tons, feeling possibly that the size will not be sold after a few weeks.

The trade is beginning to feel that the anthracite production reached its peak two years ago, when with the heavy tonnages yielded from the culm banks, the shipments reached the highest point in the history of the trade. Most dealers under these circumstances, realizing also the condition of labor at the mines, will be almost satisfied if they can keep their tonnage up to the past year. One thing is certain and that is that all companies will make their shipments on the allotment basis and already dealers who have complained about lean deliveries have been told they have had their proportion to date.

While the fact has not gained public attention, it is well known among the retail trade that the labor proposition with them is growing most difficult. Concurrently with the general unrest in labor at this time the laborers about the yards are quietly insisting on a higher rate of pay and, in many instances, dealers have privately increased wages. It is quite likely that with the coming of new wholesale rates the dealers will also be compelled to add quite a little to their gross margin to cover the rapidly increasing overhead, and coal is likely to come close to \$15 a ton retail.

The increase in the price of buckwheat and rice coal has not had the least deterrent effect in the demand for those sizes. With the mounting prices of bituminous-steam coals, the call for all anthracite-steam sizes increases from day to day, until even barley is being taken in extremely heavy tonnages. Rice has been almost cleaned out of the big storage yards and while heavy tonnages of barley are still there, they are fast melting away and it is believed that with another three or four weeks of the present demand the yards will be absolutely bare of all sizes.

The individual shippers were quick to increase the price of buckwheat and rice following the lead of the companies and many of them went even higher, with sales of buckwheat close to \$4.25 and rice \$3.50.

**Bituminous**—With the removal of the Government restrictions as to prices on the first of the month the prices quickly mounted and the Government price of \$2.95 was soon left in the background. There can be no denying that a good many houses were so anxious for business that the Government price had ceased to interest them for some weeks prior to April 1. Of course, various subterfuges to cover sales were taken advantage of.

As was predicted the spot market after being merely a name for a year came right back, with plenty of tonnage offering. Early in this week it was possible to buy good Pennsylvania steam coal at \$3.75, but this quickly changed to \$4 and from then on it moved up by gradual stages until at this time \$5 a ton is common and some sales reported at \$5.25, and a few even higher. Fairmont gas coals are being sold on

an average from \$4.75 for slack up to about \$5.30 for 1-in., while slack sales are around \$4.25. It is really difficult to quote prices and in the few instances that houses are making quotation they notify the consumer that they are for immediate acceptance.

Already there is quite a little criticism of the operators being made by the big consumers, particularly those who a few weeks ago were eagerly solicited to enter into new contracts. Many of them are extremely short of coal and felt the pinch the moment the spot market came into existence again. They feel that the shippers are taking advantage of the higher prices again and neglecting their contract obligations.

However, it is only fair to say for the more important elements in the trade that they are making serious efforts to curb the tendency to a runaway price market. These larger shippers have informed consumers that while they cannot quote a firm price for immediate shipment they will be willing to make purchases in the interest of the consumer at a fair commission over the figure at which they can procure coal. Time will only tell whether their efforts to curb the rising prices will be successful. At any rate it looks at this time as though the \$6 spot price will soon be attained, in view of the short working time at the mines during the holiday season that is now upon us.

#### BALTIMORE

Trade enters April unable to make extensive contracts. All agree that both hard and soft-coal prices will advance. Domestic bituminous scarce in this district, while run of export coal improves.

**Bituminous**—The coming of April has so far not brought a definite basis of trading to the coal men here. While some contracting is being done the majority of coal handlers are holding off until the wage question and any other immediate factor that is likely to seriously touch soft-coal selling prices are settled.

The few contracts being made are on a basis of \$4 or better, with the way left open to add new mining cost charges thereto. The trade has no doubt that the new price schedule will show an advance. While a number of handlers here say they expect to see coal selling in the spot market at a mine basis of from \$4@4.50, there are others who predict that it will go considerably beyond those figures.

#### Poor Car Supply Curtails Production

The short car supply and poor production in nearby coal districts is being reflected here in the light receipts of coal for consumption of plants in this territory. The coming of the Holy Week lay-off at the mines added a further immediate complication, but allowed an accumulation of empties for reinforcing the run of cars to the mines that should soon show beneficial results. The entire car supply in the coal regions touched by rail feeders here last week was around 50 per cent, a decrease from the previous.

The high run of cars on any day on the Baltimore & Ohio as a whole was 3,892 cars, and the low 981, with an average of around 2,300, excluding Good Friday lay-off. While many local plants were having difficulty in getting coal, the supply of fuel at Curtis Bay on export and bunker trading showed an increase, the total by days there running between 1,000 and 1,400 cars, while dumpings were from 123 to 254 cars per day. For the last week in March a total of about 40,000 tons of export coal was loaded here, and the figures for the first week in April promise to be slightly in excess of this.

**Anthracite**—Watchful waiting is now largely the policy of the local hard coal trade. This is not because they have not plenty of orders that they could fill at the existing schedule of anthracite prices, as many consumers are now urging quick deliveries because they realize that the price of hard coal is sure to go up. The trouble is that the coal is not coming through from the mines in sufficient quantity to meet this demand promptly.

#### Eastern-Inland

#### PITTSBURGH

Excited market for prompt, with high prices. Operators holding off from contracting.

Naturally the coal market has been a very excited one in the past week, and not a great deal of progress has been made towards the development of a regular

market. Large operators set out with a determination to hold their prices within what they considered conservative limits, but having doubt whether the market as a whole would stay within such limits they have been reserved about making sales, and thus the statements of large operators of what they expect in the market are not a sure criterion of what will occur.

#### High Prices Seen in Prompt Market

As to the prompt market, the resumption of trading at open prices saw high bids from consumers at the outset, and however conservative may have been the policy of large operators there were many small operators who were glad to sell at the highest prices bid. Sales of prompt lots have been made in the past few days at \$4@4.50 depending on various circumstances, including the grade of coal. Gas coal has readily brought somewhat more than steam coal. Just how long consumers will bid prices like these remains to be developed, but it seems quite possible that this prompt market may last for some time.

As to contracts it does not appear that any business has been done. Ten days ago, leading operators stated, on the basis of the report of the majority of the Robinson wage commission, that the expected to hold the contract market down to about \$3.50, at the same time allowing it to be assumed that they had no doubt they would easily be able to secure such a price.

With the slightly higher wage rates that it now seems are to be paid some of the operators are disposed to think of \$3.75, particularly for gas coal. There is no doubt, furthermore, that operators are disposed to hold off from the making of contracts in fear, apparently, that if they should sell at their present idea of prices other operators would secure higher figures, and this would be objectionable. We quote the prompt market for mine-run, steam and gas, at \$4@4.50, and contract coal nominal at \$3.50@3.75, per net ton at mine, Pittsburgh district.

#### COLUMBUS

Uncertainty as to prices still continues in the Ohio coal trade. Producers and shippers are not making quotations and are holding off to see the trend of affairs. Demand for all grades continues good.

Contracting is being held in abeyance for the time being until it is seen what trend the market takes. Some bidding of high prices for coal is reported although on the whole, there is little doing in the way of taking orders. Producers as well as shippers are content to wait until the market settled to see "where they are at" so to speak and to get their breath.

Domestic demand is growing stronger and a large majority of the retailers are in the market for immediate shipment. The campaign to "buy early" is already bringing fruit and some householders are laying in their supply for the coming winter. Retail stocks are not large and with a good demand in sight dealers are rather anxious to secure extra stocks.

Dealers are trying to get Pocahontas and West Virginia splints. Pocahontas is coming in to a small degree while splints are coming in better than formerly. The large bulk of the trade is still in Hocking and Pomeroy grades. Retail prices are very uncertain as dealers announce that the usual margin of \$2 over and above the price at the mines plus the freight will be changed.

Steam trade is active in every locality. Demand is good from rubber concerns, iron and steel factories and general manufacturing. In addition there is a movement to buy on the part of public service concerns and some state institutions will be supplied for six months in the future. Taking it all in all the steam trade is firm in every way with some bidding for choice steam grades.

Railroads are still using a fair tonnage and a large part of it is being confiscated. This restricts shipments to commercial users to a certain extent.

Production has not been improved in any of the Ohio fields. Car shortage still continues and as a result the output in the Hocking Valley has been but 50 per cent of normal. Pomeroy Bend, Cambridge and Crooksville have produced from 45 to 50 per cent during the past week. In eastern Ohio the official statement shows that the car supply was 44 per cent during the week.

No contracting for Lake shipment is reported as producers are still holding off to see what happens. Lake shippers are anxious for tonnage as there will be a good demand at the head of the lakes. April 1 was a holiday in every mining field and this still further reduced the output in all sections.

#### CINCINNATI

Early advances in coal prices are predicted, as the result of the miners' new wage scale which went into effect last week.

Retail dealers refuse to quote any prices because of the present uncertainty. They have not the least idea as to what they will have to pay the operators. It is the opinion of many operators that bituminous coal will sell around \$8 a ton retail and smokeless lump will be around \$10, because there is a scarcity of smokeless and this city will receive only 25 per cent of its normal smokeless coal supply this year.

It is said that the 27 per cent increase in wages allowed the miners will cause the prices of coal in this city to advance at once. The situation during the past week has changed little, the car supply still remaining the prime factor hindering production. While transportation conditions in various other sections of this state may be somewhat improved there is still a most marked shortage in this territory.

Producers generally have refrained from making contacts owing to the uncertainty of wages and also owing to the government price restrictions. With a prospect that a wage scale may be adopted at an early date and with government price restrictions no longer in existence there is believed that much tonnage will soon be under contract.

Up until the proclamation of the President terminated all control of the coal industry, except as to exports, coal produced in this vicinity was being confiscated on an unprecedented scale without any apparent reason and frequent effort to put a stop to such confiscation had proved to be unavailing.

Now that no more Regional Committees are functioning it is reasonable to suppose that the wholesale confiscation of coal, continued after the railroads were returned to private ownership will cease. However operators still report this practice in evidence and say they will take legal steps if it is not stopped immediately.

The market is very strong at the present time not only to take care of current needs but for storage purposes, industrial concerns desiring to store coal before there is material advances in prices. However it is possible for utilities and industries to secure fuel only in limited quantities owing to the inability of producers to ship.

The supply of coal for domestic purposes has been so small that dealers have been and are still unable to meet the demand even though warmer weather is prevailing. At the present rate of supply difficulty is being experienced by producers even in keeping contract customers supplied with enough tonnage to continue operation.

#### Southern

#### LOUISVILLE

Car supply in Kentucky so far this year has been the worst ever known. No hopes for much improvement in April. Mines working about half time as a whole. Demand keen.

Figures secured on car supply in Kentucky on the Louisville & Nashville, and throughout that system, show a deplorable condition. In February of this year supply over the system was 56.65, and in March it is believed that it will not run over 50 per cent, although all figures are not in yet. April is not expected to show any improvement over March, due to increased demand. The Hazard field up to and including March 27, averaged 40 per cent supply for the month. For the week of March 22, average working time at most of the mines was one and eight-tenths days. The Knoxville division of the Louisville & Nashville, on one day of the same week had 9.8 per cent car supply.

Under such conditions production is very low, and labor is deserting some fields to go into farming and other lines. There is a good demand for all grades, but it can not be supplied. Due to mild weather retail demand for block should drop, but consumers are expecting higher prices, and are ordering, and also asking prices for stocking.

Retailers plan advancement on April 1, of 55c. a ton gross margin, making the gross \$2.75, instead of \$2.20. This increase had been asked of the High Cost Commission before control was lifted.

It is reported that western Kentucky operators will absorb the 27 per cent wage increase in advancing block coal from \$2.60 to \$3.15@3.25, with other grades on the usual differential.



Eastern Kentucky is saying very little, although there is a meeting this week of Hazard operators at Lexington, at which numerous matters will be discussed. It is believed that the eastern Kentucky people will advance prices anywhere from 50c to \$1 a ton, as coal has been selling at considerably below what operators have felt that it should bring, especially the high-grade gas and byproduct coals which have been in strong demand in the Harlan field.

While some traffic experts believe that car supply will be just as bad in April as it was in March, this view is not held by all operators. During March heavy snows, freezing engines, embargoes, blocked terminals, and general congestion held back movement of both empties and loads. From now on traffic should be much more open, and cars should function much better.

## Lake Region

### BUFFALO

**Bituminous market wild—Prices changing rapidly. Jobbers return home from Pittsburgh dazed—Almost anything to be expected—Not likely to last—Anthracite very scarce.**

**Bituminous**—All members of the trade are lost in an effort to size up the market and if possible, get something out of it before the collapse comes. If the car supply should increase to any great extent the present conditions will not last long. Some predict that prices will go up for a week or ten days and then slack off but nobody really knows what will happen. With prices going up a dollar or so every day or two in Pittsburgh this market is mostly looking on.

In fact there is no market here worth the name, if there is one anywhere else. It was only by a special effort that jobbers just back from Pittsburgh could be induced to say anything as to quotations. They protested that if they gave anything out it would not be likely to mean anything in 24 hours. With the beginning of the week Pittsburgh had no prices, as everybody was waiting for someone else, but by Tuesday quotations began to rise above those former government figures and in a day or two they were asking anywhere up to \$5 at the mines for Youghiogheny gas coal and corresponding prices for everything else. It is agreed that this means a market gone crazy.

With the utmost reluctance was anybody induced to speak of the market in figures. What was given out was this: \$3 for Pittsburgh slack, \$3.25 for mine-run and \$3.50 for lump, with Youghiogheny \$4.50. To this add \$1.75 freight for Buffalo. Of course at such a time as this Buffalo has nothing that approaches an independent market. The buying is practically all on orders received from consumers. If they agree to pay producers' prices then it is safe to buy, but nothing otherwise. The amount of what may be called eager caution necessary to do business is exceedingly great.

What the jobber wants to do is to get a line of production right away and then follow the rapid changes that are sure to follow. There is quite a fair natural demand, but consumers will not of course buy more than they need now. Cars are about as scarce as ever and they do not promise to become any plentier right away. It takes a bold and an experienced shipper to do anything satisfactory now.

**Anthracite**—Without assuming anything of the wild type of the bituminous market, the hard-coal situation is anything but tranquil. No April prices have been given out yet, although they are expected any day. All that the shipping agents will say is that coal will be sold right along and no retroactive prices will be asked. That an advance will be put on in a few days is expected.

At the same time anthracite is very scarce. Everything but the weather has prompted consumers to buy and they are taking every pound that comes in. It will be sometime before the demand is satisfied. Coal will not be plentiful as yet for mining is sure to be light through the Easter season and the scarcity of cars adds further complications. All that the consumer can do is to find a friend in the retail trade and stick to him until he gets coal. Shippers will not need to reduce the prices before midsummer. It will be difficult to meet the demand. Still there is one comfort in that, for but for the summer buying last year the winter supply would have been exhausted, and it came near that as it was.

The prospect of anthracite for the Lake trade is very small yet. It is time that the loading began, but there is no coal to spare. At the same time the supply on the upper-Lake docks is little or nothing and if there is no new supply by May 1 somebody will go without coal.

### TORONTO

**Serious shortage of coal especially bituminous—Dealers behind in deliveries and refusing orders—Fuel Administrator regards outlook with anxiety.**

There is a serious shortage of both anthracite and bituminous coal the shipments coming forward from the mines being quite inadequate to the demand. Dealers are overwhelmed with orders from consumers desirous of laying in supplies early in the season which they are unable to fill, and are generally refusing to accept new orders until they can overtake delayed deliveries.

The situation as regards bituminous is the worse. Industrial plants using coal are unable to lay in stocks and can only obtain hand-to-mouth supplies. H. A. Harrington, Fuel Administrator for Ontario has issued a statement to the effect that the outlook for the coming coal year gives call for grave anxiety and calls for prompt and efficient action.

He says that Ontario is 6,000,000 tons short of bituminous coal and though 35,000 tons should come in daily only 20,000 tons are actually arriving. He estimates the season's requirements at 18,000,000 tons.

Quotations per short tons are as follows:

|                                      |         |
|--------------------------------------|---------|
| Retail                               |         |
| Anthracite egg, stove, nut and grate | \$13.50 |
| Pea                                  | 12.00   |
| Bituminous steam                     | 11.00   |
| Slack                                | 10.00   |
| Domestic lump                        | 12.00   |
| Cannel                               | 13.00   |
| Wholesale f.o.b. cars at destination |         |
| Three-quarter lump                   | 9.00    |
| Slack                                | 8.00    |

### CLEVELAND

The question of price advances is wholly one of "how much?" Receipts are slowly but steadily increasing. No. 8 coal is now moving to Lake Erie ports for the Lake trade.

**Bituminous**—Price quite naturally appears to be the chief consideration at the moment, and it now develops that the new price schedule will be the result more of what buyers bid than what operators ask. The more conservative operators, who claim to be trying to restrict the increase to moderate size, say the advance will at least cover the entire 27 per cent wage advance. This would make No. 8 mine-run and slack, under the government schedule, \$2.35 f.o.b. mine, at least \$3. But \$3.50@4 are reported freely bid, while one operator is known to have been offered \$5. In the face of these offers, which seem to be a surprise even to operators, \$3@3.50 mine-run and slack appears most conservative. How much headway these so-called conservative interests will be able to make in the face of \$4@5 offers at this moment is still a matter of opinion.

Thus far practically no contracting has been done. The attitude both of operators and buyers confirms the belief that prices will mount up as the summer wears on and that a freight advance of at least 20 per cent is a certainty about Sept. 1. Buyers are more anxious to contract than operators are to sell. Steam-coal users are feverish in their efforts to place tonnage, virtually "shopping" from one operator's office to another's. Others are more cautious, fearing their offers may be used by operators in forcing up other bidders.

A Baltimore & Ohio purchasing official has vainly canvassed Cleveland operators in the last few days. In some quarters it is asserted that the railroads will put the brakes on a sky-rocketing market. That the carriers will provide a large car supply for operators who pass their needs by in the rush for soaring prices is asking too much. For the present, No. 6 and No. 8 slack may be said to be going at \$6@6.25, No. 6 and No. 8 mine-run at \$6.35@6.60, and No. 8 3-in. at \$6.60@6.85. These prices are mere fill-in ones, to tide over the gap between the controlled market and the wide open one, than they are representative of new business. For domestic consumption, No. 8 Pittsburgh coal still stands at \$7 a ton, delivered, West Virginia split is \$8.30 and Massillon lump is \$7.40@7.65. No. 8 district mines report car supply at about 60 per cent. Stocking continues at most Cleveland steam-coal users' plants, though on a limited scale. Domestic bituminous buying is a negligible quantity.

**Pocahontas and Anthracite**—Practically none of either grades is moving at present. Dealers, though, look for heavy summer buying. Prices on both grades are unchanged. Anthracite egg and grate may be had at \$12.20 and chestnut and stove at \$12.50. The minimum on Pocahontas shoveled lump is \$9 and on mine-run \$8.

**Lake trade**—Carrying charges for this season have been firmly established at 50c a ton to Lake Superior and 60c to Lake Michigan, and all contracting is being done on this basis. Some No. 8 coal is being loaded at Lake Erie ports, though, so far, not more than half a dozen Great Lakes freighters have been loaded. If the first cargo of the season reaches the head of Lake Superior before the last week of April the lake trade will be surprised.

### DETROIT

**Jobbers fear the frenzied buying by consumers will precipitate a run-away market. Market is in an unsettled condition.**

**Bituminous**—Among some of the Detroit jobbers and wholesalers the fear is expressed that the coal trade will be brought into disrepute and perhaps under some form of restrictive regulation in consequence of the way prices are being advanced through efforts of some of the buyers to round up coal. These buyers, disregarding the usual trade channels have sent representatives to buy coal direct from producers in various fields.

In their excessive eagerness to supply their needs the men in the field are reported to be bidding against each other thus forcing prices to a level that is alarming to the more conservative jobbers, who believe that only great caution can avert a serious condition.

It is pointed out that the better class of jobbers and the leading operators do not desire to see a run-away market; that they believe such a development, particularly at this time, would work lasting injury to the trade. With the buyers rushing into the market and competing with each other in the attempt to get early coal shipments, jobbers say there is almost no limit to the level to which prices may be carried. The jobbers do not feel that the operators can be justly criticised, the fault for present conditions, in their opinion, resting with the buyers.

With the market in its unsettled condition and with very little coal being brought into Detroit, jobbers say it is impossible to give quotations that would possess any degree of stability.

## Middle West

### MIDWEST REVIEW

Interest centered this week in April prices, and on the day this market report is being written, but few operators in the Middle West territory are in a position to give to the trade an accurate quotation on the various sizes produced at the mines.

It is thought that all of the coal fields in Illinois and Indiana will establish their prices from the Franklin County operators, who have set their price on 6 in. Lump, 6 x 3-in. Furnace, and 3 x 2 in. Small Egg, from \$3.55@3.40 f.o.b. mines. As it is to be expected, the producing mines in the Springfield and other districts, not so favored as the Franklin County field, will probably quote an opening price five or ten cents below Franklin County prices.

The demand for coal, both on the part of steam-coal buyers, retail coal merchants, and the public in general, keeps up in an unprecedented manner. A call was received a few days ago, from a retail dealer who has a large yard in central Iowa. This man has been in the retail coal business for twenty-seven years, and he stated that in his district the buying public had absolutely stampeded, and were in a panic for coal.

As this retailer was fortunate in having a big supply of coal on hand, he did more business in the month of March than ever before in any one month in his career in the coal business. We are giving this as an example of the state of mind of the coal buying public, out here in the Middle West. This dealer's experience so far as the demand for coal is concerned, can be duplicated in countless cases, but unfortunately most of the dealers have but small supplies of coal on hand. The opening prices on Pocahontas coal are so high that this grade of coal is becoming almost prohibitive in the Middle Western states, such as Missouri, Iowa, Nebraska and southern Minnesota.

As a result, the retail trade in the states just mentioned have turned to Oklahoma smokeless coal. It is claimed by many retailers that Oklahoma smokeless coal is as good if not better, than Pocahontas coal, as it resembles it very closely in appearance and burning qualities, with the exception that it holds its fire far longer than New River or Pocahontas. This coal can be produced and sold in the above states at prices under New River and Pocahontas. The high prices of the West Virginia operators have served to introduce in a very large scale, coals which were formerly but little known.

The car supply in the Indiana and Illinois producing fields is still very poor, although it is hoped that conditions will better themselves during the early part of April. The demand for coal, from both states, has kept up very strongly. In fact it looks as if it would take several months run, on a 100 per cent basis, to catch up for the time lost during the strike and that period after the strike when the car supply was, and still is, inadequate.

Every coal man knows that last February it was almost impossible to give away coal, let alone sell it. The public had so much coal on hand they were not interested in coal even at reduced prices. It is believed that the rest of the charges are just as unreasonable as the one mentioned above. It is safe to say that the men, under indictment have the backing and sympathy of the entire coal industry in the Middle West.

#### CHICAGO

Coal is arriving in Chicago in fairly satisfactory quantities, although but few dealers have been able to get enough coal on hand to stock their bins.

The public is buying coal just as fast as it arrives. The steam and retail trade are very anxious to place their orders and are having some difficulty in so doing. While no definite prices have actually been established by circular for the month of April, we are publishing herewith what we believe will be the opening prices for the month, f.o.b. mines

|   |                 | Freight rate |
|---|-----------------|--------------|
|   |                 | Chicago      |
| Illinois                                    |                 |              |
| Southern Illinois                           |                 |              |
| Franklin, Saline and<br>Williamson Counties |                 |              |
| Prepared Sizes....                          | \$3.15 @ \$3.40 | \$1.55       |
| Mine-Run.....                               | 3.00 @ 3.10     | 1.55.        |
| Screenings.....                             | 2.60 @ 2.75     | 1.55         |
| Central Illinois                            |                 |              |
| Springfield District                        |                 |              |
| Prepared Sizes....                          | \$3.00 @ \$3.25 | \$1.32       |
| Mine-Run.....                               | 2.75 @ 3.00     | 1.32         |
| Screenings.....                             | 2.50 @ 2.60     | 1.32         |
| Northern Illinois                           |                 |              |
| Prepared Sizes....                          | \$4.00 @ \$4.50 | \$1.24       |
| Mine-Run.....                               | 3.50 @ 3.75     | 1.24         |
| Screenings.....                             | 3.00 @ 3.25     | 1.24         |
| Indiana                                     |                 |              |
| Clinton and Linton                          |                 |              |
| Fourth Vein                                 |                 |              |
| Prepared Sizes....                          | \$3.00 @ \$3.25 | \$1.27       |
| Mine-Run.....                               | 2.75 @ 2.90     | 1.27         |
| Screenings.....                             | 2.50 @ 2.65     | 1.27         |
| Knox County Field                           |                 |              |
| Fifth Vein                                  |                 |              |
| Prepared Sizes....                          | \$3.00 @ \$3.15 | \$1.37       |
| Mine-Run.....                               | 2.75 @ 2.90     | 1.37         |
| Screenings.....                             | 2.50 @ 2.60     | 1.37         |
| Brazil Block.....                           | \$4.25 @ \$4.50 | \$1.27       |
| Eastern coals                               |                 |              |
| Pocahontas and New<br>River Coals           |                 |              |
| Prepared Sizes....                          | \$5.00 @ \$6.00 | \$2.65       |
| Mine-Run.....                               | 4.00 @ 4.50     | 2.65         |
| West Virginia Splint<br>and Gas Coals       |                 |              |
| Prepared Sizes....                          | \$4.25 @ \$4.75 | \$2.65       |
| Mine-Run.....                               | 3.75 @ 4.25     | 2.65         |
| Southeastern Kentucky                       |                 |              |
| Hazard, Harlan and<br>Big Sandy Fields      |                 |              |
| Prepared Sizes....                          | \$4.50 @ \$4.75 | \$2.45       |
| Mine-Run.....                               | 3.75 @ 4.25     | 2.45         |
| Smithing Coal.....                          | \$4.50 @ \$5.25 | \$2.60       |

In collecting these prices widest difference of opinion in regard to Eastern coals were found especially coals from the New River and Pocahontas fields. Some sales agents and producers state that they believed the price on Pocahontas prepared coal will be from \$5.00 to \$6.00 per ton f.o.b. mines, while mine-run will be anywhere from \$4.00 to \$4.50 per ton.

Kentucky prepared coals will doubtless be in the vicinity of \$4.50 to \$4.75, as we understand some dock interests have bought a very large tonnage of 13-in. Lump from a southeastern Kentucky field, on a basis of \$4.50 f.o.b. mines. If this is true, it will probably bring the price of fancy domestic sizes up to \$4.75. It is not believed that operators with mines in southeastern Kentucky will ask more than \$4.75 for their domestic coal, but we have heard that some jobbers are asking from \$5.00 to \$5.25.

#### ST. LOUIS

Work has resumed April 2 in a general way throughout the Illinois field.—Car shortage still prevails. Demand eased up. Country domestic demand fair.

The uncertainty that came with April 1 still prevails to a certain extent. Throughout the field there was no work on the first, but with the second perhaps two-thirds of the miners responded at mines where there was work. The feeling is that the entire force will return after the Easter holidays.

The operators are somewhat at sea as to what the increased cost in the Illinois field will amount to. It is figured that it will average about 50c. per ton on the mines that work full time and may be as high as 75c. per ton on mines located on railroads that furnish cars for one and two days a week.

The shortage of cars is still as severe as it has been for sometime. There is nothing to indicate unless the demand lets up that cars will become any more plentiful. As a matter of fact, looking far enough ahead, it is doubtful whether there will be as much equipment tonnage in use in September and October for the movement of coal as there is today in the Middle West.

The local steam demand is pretty well taken care of on storage coal. Locally the domestic demand is easy excepting on storage coal for next winter of the higher grades, such as anthracite, smokeless, coke and Carterville. There are no prices fixed as yet on the anthracite or coke retail.

In the Standard field there is likely to be an easing up on all sizes in the very near future. The easing up will be more pronounced in this field than elsewhere in Illinois, but it will not be sufficient to force a surplus of empty equipment.

In the Mt. Olive field conditions are expected to be considerably better than in the Standard field. The chances are that these mines will find a place for the tonnage every day the cars are furnished, for all sizes.

Car shortage still prevails in all fields. There is every reason to believe that most of the railroads will begin early buying this year. The Missouri Pacific is still in bad shape for coal and continues its policy of confiscating coal because of its inability to purchase. It is the one unfortunate blot at the present time in transportation circles in the Middle West.

It is anticipated that not more than twenty per cent of the anthracite needed for this market will be shipped this year and practically no smokeless. The prices effective April 1 retail were:

|   |               |
|---|---------------|
| Standard lump.....                              | \$5.00        |
| Mt. Olive lump.....                             | 6.00          |
| Carterville lump and egg.....                   | \$6.75 @ 7.00 |
| The prices f.o.b. mine effective April 1, were: |               |
| Standard 2-in. lump.....                        | \$2.75 @ 2.85 |
| 6-in. lump, egg and nut.....                    | 2.75 @ 3.00   |
| Screenings.....                                 | 2.50          |
| Mt. Olive lump, egg and nut.....                | 3.00 @ 3.25   |
| Carterville lump, egg and nut.....              | 3.25 @ 3.40   |
| Mine-run from all fields.....                   | 2.65 @ 2.80   |

|   |               | Williamson and Franklin Counties | Mt. Olive and Staunton | Standard |
|---|---------------|----------------------------------|------------------------|----------|
| Prepared sizes (lump, egg, nut, etc.).....                        |               |                                  |                        |          |
|   | \$3.25 @ 3.40 | \$3.00 @ 3.25                    | \$2.75 @ 3.00          |          |
| Mine-run.....   | 2.65 @ 2.80   | 2.65 @ 2.80                      | 2.65 @ 2.80            |          |
| Screenings.....   | 2.50 @ 2.65   | 2.50 @ 2.65                      | 2.50                   |          |
| Williamson-Franklin rate to St. Louis is \$1.10; Other rates 95c. |               |                                  |                        |          |

#### MILWAUKEE

Coke prices advanced 75c. per ton. Coal handlers decide to postpone action on coal advance until May 1. Coal scarce, but some anthracite is now coming by rail.

The expected advance in coal prices on April 1 did not materialize as far as Milwaukee is concerned. The present supply of coal here is practically all sold and no change will be made in the price schedule until May 1. Coke took a jump of 75c. per ton, however, egg, range and nut sizes selling at \$13.25 and pea coke at \$10.25. "We expect a general raise in the price of coal here," said Edw. A. Uhrig, president of the Milwaukee-Western Fuel Co., the leading dock company, "but it is impossible to estimate what the increase will be."

"A large percentage of the coal used here comes from Eastern and Southern fields and there is strong competition at these points at present between American and foreign buyers. European buyers are offering fancy prices, which will naturally boost values all along the line." The market at Milwaukee is normal for this season of the year. The supply is poor, but fortunately mild, spring weather prevails.

#### Pacific Coast

##### SEATTLE

Quotations at the present time are as follows:

Seattle—\$6.75 per ton 2000 lb., f.o.b. bunker tips.

Tacoma—\$6.75 per ton 2000 lb., f.o.b. bunker tips.

Portland—\$8.75 per ton 2000 lb., f.o.b. bunker tips.

Portland—\$9.50 per ton 2000 lb., in the stream over the ship's rail.

The above rates apply to the standard grades of Black Diamond and South Prairie coal.

Quotations on British Columbia coal in Seattle Harbor are as follows:

Comox Lump—\$10.00 per ton of 2240 lb., f.a.s.

Comox Marine Mixture \$9.85 per ton 2240 lb., f.a.s.

##### SAN FRANCISCO

Dealers are much encouraged by the newly-acquired habit of householders putting in stocks of coal in the spring and summer for next winter. The practice was begun in the war period under the impression that it was patriotic and has gone over into these days following the great conflict. Factories and manufacturing plants hereabouts mostly use oil but those burning coal try to keep quite a stock on hand.

The weather is so mild there is no difficulty in either getting the coal here from the mines of Utah and Wyoming or in distributing it when it comes. Prices are unchanged at this writing.

The bunker price at present is \$13.55, which has been maintained for some time. For domestic use, bituminous prices from Utah and Wyoming, f.o.b. net ton, are: Stove, \$3.65; Lump, \$3.65.

#### Coke

##### CONNELLSVILLE

High opening prices after ending of Government control, and still higher prices afterward. Trading confined to April shipments.

The Connellsville coke market had a wild opening after the removal of Government price restrictions. While the limitations did not come off until the end of March, trading began before that time as it was for shipment and invoicing April 1 and later. There had been practically no coke to spare after contracts had been taken care of, but a great deal of business expired at the end of March, and this seemed to leave more uncovered consumption than unsold production.

The opening transactions were at \$9 for furnace coke. One or two sales for April were made at this figure, together with a few odd lots and one contract for a small monthly tonnage to the end of the year. While predictions had been made that the market would find itself at about \$9, it began to advance immediately after the opening transactions, from 50c to \$1 a day, until a fairly steady level has obtained in the past two or three days, this being at \$11 @ 12 for furnace coke and \$13 @ 14 for foundry coke, per net ton at ovens.

Furnaces might possibly have been willing to contract for the remainder of the year at \$9 or thereabout, but when the market advanced so far above that level the trading settled down to April delivery exclusively, and most of the unsold production of the month has now been taken up. Of course many contracts had been made for the half year, that tonnage having nothing to do with the present market.

The Courier reports production in the Connellsville and Lower Connellsville region in the week ended March 27 at 254,552 tons, an increase of 5,312 tons.

##### BUFFALO

The coke market partakes fully of the wildness of bituminous coal, the latest quotations being \$12 for 72-hr. foundry at the ovens and \$10 for 48-hr. furnace. To these prices add \$2.60 freight for Buffalo. No low grades are offered. Buffalo is preparing to do a good amount of smelting this season and ore will begin to come in just as soon as the ice is out of the lakes. The present warm weather promises an earlier opening of the Lakes than was expected, but the ice is still heavy. Work on the Donner-Union coke plant on Buffalo creek in the city progresses, but a report this week states that no coke is likely to be made there before fall.



# CURRENT PRICES—MATERIALS & SUPPLIES

## IRON AND STEEL

FIG IRON—Quotations compiled by the Matthew Addy Company:

|   | Current      | One Month Ago |
|---|--------------|---------------|
| <b>CINCINNATI</b>   |              |               |
| No. 2 Southern  | \$44.60      | \$44.60       |
| Northern Basic  | 42.80        | 42.80         |
| Southern Ohio No. 2   | 43.80        | 43.80         |
| <b>NEW YORK, Tidewater delivery</b>                         |              |               |
| 2X Virginia (silicon 2.25 to 2.75)                          | 48.65        | 47.65         |
| Southern No. 2 (silicon 2.25 to 2.75)                       | 47.70        | 47.70         |
| <b>BIRMINGHAM</b>   |              |               |
| No. 2 Foundry   | 41.00        | 41.00         |
| <b>PHILADELPHIA</b>   |              |               |
| Eastern Pa., No. 2 x 2.25-2.75 sil.                         | 45.35-46.35* | 45.35-46.35*  |
| Virginia No. 2  | 44.25*       | 43.25*        |
| Basic   | 43.00†       | 43.00†        |
| Grey Forge  | 42.50*       | 42.50*        |
| <b>CHICAGO</b>  |              |               |
| No. 2 Foundry Local   | 43.25        | 43.25         |
| No. 2 Foundry Southern                                      | 46.60        | 46.60         |
| <b>PITTSBURGH, including freight charge from the Valley</b> |              |               |
| No. 2 Foundry Valley  | 43.65        | 43.65         |
| Basic   | 42.90        | 42.90         |
| Bessemer  | 43.40        | 43.40         |
| <b>MONTREAL</b>   |              |               |
| Silicon 2.25 to 2.25%                                       | 43.25        | 43.25         |

\* F. o. b. furnace. † Delivered.

STRUCTURAL MATERIAL—The following are the base prices, f.o.b. mill, Pittsburgh, together with the quotations per 100 lb. from warehouses at the places named:

|                                    | Mill     | Current  | One Year Ago | St. Louis | Chicago |
|------------------------------------|----------|----------|--------------|-----------|---------|
| Beams, 3 to 15 in.                 | \$2.45@4 | \$3.97@5 | \$3.47       | \$4.04    | \$3.97  |
| Channels, 3 to 15 in.              | 2.45@4   | 3.97@5   | 3.47         | 4.04      | 3.97    |
| Angles, 3 to 6 in., 1/2 in. thick. | 2.45@4   | 3.97@5   | 3.47         | 4.04      | 3.97    |
| Tees, 3 in. and larger.            | 2.45@4   | 4.02@5   | 3.52         | 4.04      | 4.02    |
| Plates                             | 2.65@4   | 4.17@5   | 3.47         | 4.24      | 4.17    |

BAR IRON—Prices in cents per pound at cities named are as follows:

|  | Pittsburgh | Cincinnati | St. Louis | Birmingham |
|--|------------|------------|-----------|------------|
|  | 4.25       | 3.50       | 3.44      | 4.25       |

NAILS—Prices per keg from warehouse in cities named:

|      | Mill   | St. Louis | Birmingham | San Francisco | Dallas |
|------|--------|-----------|------------|---------------|--------|
| Wire | \$4.00 | \$4.50    | \$4.15     | \$5.75        | \$5.50 |
| Cut  | 5.40   | 7.00      | 7.00       | 6.90          | 7.40   |

TRACK SUPPLIES—The following prices are base per 100 lb. f.o.b. Pittsburgh for carload lots, together with the warehouse prices at the places named:

|   | Pittsburgh | Chicago | St. Louis | San Francisco | Birmingham |
|---|------------|---------|-----------|---------------|------------|
| Standard railroad spikes 1/2-in. and larger | \$4.00     | \$3.62  | \$4.44    | \$5.65        | \$5.50     |
| Track bolts                                 | 4.90-5.00  | 4.62    | Prem.     | 6.65          | 7.50       |
| Standard section angle bars                 | 2.75       | 3.02    | 2.7       | 4.90          |            |

COLD FINISHED STEEL—Warehouse prices are as follows:

|   | New York | Chicago | Cleveland | St. Louis |
|---|----------|---------|-----------|-----------|
| Round shafting or screw stock, per 100 lb. base | \$5.50   | \$5.40  | \$5.50    | \$5.00    |
| Flats, squares and hexagons, per 100 lb. base   | 6.00     | 5.90    | 5.50-6.00 | 5.50      |

HORSE AND MULE SHOES—Warehouse prices per 100 lb. in cities named:

|          | Mill   | Cincinnati | Chicago | St. Louis | Birmingham |
|----------|--------|------------|---------|-----------|------------|
| Straight | \$5.75 | \$7.50     | \$7.00  | \$7.25    | \$7.00     |
| Assorted | 5.85   | 7.50       | 7.15    | 7.50      | 7.25       |

Cincinnati—Horseshoe nails sell for \$4.50 to \$5 per 25-lb. box.

CAST-IRON PIPE—The following are prices per net ton for carload lots:

|                | Current | One Month Ago | One Year Ago | Chicago | St. Louis | San Francisco | Dallas  |
|----------------|---------|---------------|--------------|---------|-----------|---------------|---------|
| 4 in.          | \$75.30 | \$70.30       | \$60.70      | \$77.80 | \$71.00   | \$93.55       | \$70.30 |
| 6 in. and over | 72.30   | 67.30         | 57.70        | 74.80   | 68.00     | 90.55         | 67.30   |

Gas pipe and 16-ft. lengths are \$1 per ton extra.

STEEL RAILS—The following quotations are per ton f.o.b. Pittsburgh and Chicago for carload or larger lots. For less than carload lots 5c. per 100 lb. is charged extra:

|                           | Pittsburgh    | Chicago      |
|---------------------------|---------------|--------------|
|                           | Current       | One Year Ago |
| Standard Bessemer rails   | \$55.00       | \$55.00      |
| Standard openhearth rails | 57.00         | 57.00        |
| Light rails, 8 to 10 lb.  | 2.585* @ 3.75 | 3.135        |
| Light rails, 12 to 14 lb. | 2.54* @ 3.75  | 3.09*        |
| Light rails, 25 to 45 lb. | 2.45* @ 3.75  | 3.00*        |

\* Per 100 lb.

OLD MATERIAL—The prices following are per gross ton paid to dealers and producers in New York. In Chicago and St. Louis the quotations are per net ton and cover delivery at the buyer's works, including freight transfer charges:

|                         | New York | Chicago     | St. Louis |
|-------------------------|----------|-------------|-----------|
| No. 1 railroad wrought  | \$33.00  | \$27.00     | \$25.50   |
| Stove plate             | 31.00    | 31.00       | 30.50     |
| No. 1 machinery cast    | 41.00    | 38.75       |           |
| Machine shop turnings   | 16.50    | 13.75       | 15.00     |
| Cast borings            | 19.00    | 14.00       | 15.00     |
| Railroad malleable cast | 29.00    | 28.00       | 26.00     |
| Rerolling rails         | 33.00    | 32.50       | 32.50     |
| Relaying rails          | 50.00    | 40.00-50.00 | 50@55     |

COAL BIT STEEL—Warehouse price per pound is as follows:

|  | New York | Cincinnati | Birmingham | St. Louis | Chicago |
|--|----------|------------|------------|-----------|---------|
|  | \$0.10   | \$0.16†    | \$0.18     | \$0.11    | \$0.15  |

DRILL STEEL—Warehouse price per pound:

|        | New York | St. Louis | Birmingham |
|--------|----------|-----------|------------|
| Solid  | 14c.     | 13c.      | 15c.       |
| Hollow | 16c.     |           |            |

PIPE—The following discounts are to jobbers for carload lots on the Pittsburgh basing card, discounts on steel pipe, applying as from January 14, 1920, and on iron pipe from January 7, 1920:

|            | Steel | Galv.  | Iron   | Galv.  |
|------------|-------|--------|--------|--------|
| Inches     | Black |        | Black  |        |
| 1/2 and 1  | 47    | 20 1/2 | 34 1/2 | 18 1/2 |
| 1 1/2 to 3 | 51    | 36 1/2 |        |        |
| 4 to 6     | 54    | 41 1/2 |        |        |

|            | Steel | Galv.  | Iron   | Galv.  |
|------------|-------|--------|--------|--------|
| Inches     | Black |        | Black  |        |
| 2          | 47    | 34 1/2 | 28 1/2 | 14 1/2 |
| 2 1/2 to 6 | 50    | 37 1/2 | 30 1/2 | 17 1/2 |

BUTT WELD, EXTRA STRONG PLAIN ENDS

|            | Steel | Galv.  | Iron   | Galv.  |
|------------|-------|--------|--------|--------|
| Inches     | Black |        | Black  |        |
| 1/2 and 1  | 43    | 25 1/2 | 34 1/2 | 19 1/2 |
| 1 1/2 to 3 | 48    | 35 1/2 |        |        |
| 4 to 6     | 52    | 39 1/2 |        |        |

LAP WELD, EXTRA STRONG PLAIN ENDS

|            | Steel | Galv.  | Iron   | Galv.  |
|------------|-------|--------|--------|--------|
| Inches     | Black |        | Black  |        |
| 2          | 45    | 33 1/2 | 29 1/2 | 16 1/2 |
| 2 1/2 to 4 | 48    | 36 1/2 | 31 1/2 | 19 1/2 |
| 4 1/2 to 6 | 47    | 35 1/2 | 30 1/2 | 18 1/2 |

Stocks discounts in cities named are as follows:

|  | New York | Cleveland  | Chicago |
|--|----------|------------|---------|
|  | Black    | Galvanized | Black   |
| 1 to 3 in. steel butt welded   | 40%      | 24%        | 31%     |
| 3 1/2 to 3 in. steel lap welded  | 35%      | 20%        | 27%     |
| Malleable fittings. Class B and C, from New York stock sell at list + 23%. |          |            |         |
| Cast iron, standard sizes, net.  |          |            |         |

WIRE ROPE—Discounts from list price on regular grades of bright and galvanized are as follows:

|  | New York and St. Louis |
|--|------------------------|
| Hercules red stand, all constructions                | 20%                    |
| Patent flattened strand, special and cast steel      | 20%                    |
| Patent flattened strand, iron rope                   | 5%                     |
| Plow steel round strand rope                         | 35%                    |
| Special steel round strand rope                      | 30%-10% and 5%         |
| Cast steel round strand rope                         | 22 1/2%                |
| Iron strand and iron tiller                          | 5%                     |
| Galvanized iron rigging and guy rope                 | +12%                   |
| San Francisco: Galvanized, less 5%, bright less 25%. |                        |
| Chicago, +12% on galvanized, 30 off on bright.       |                        |

STEEL SHEETS—The following are the prices in cents per pound from jobbers' warehouse at the cities named:

|                | Large     | Current    | One Year Ago | Cleveland | Chicago |
|----------------|-----------|------------|--------------|-----------|---------|
|                | Mill Lots |            |              |           |         |
| Blue Annealed  |           |            |              |           |         |
| No. 10         | 3.55-4.00 | 7.00-8.00  | 4.57         | 7.30      | 6.02    |
| No. 12         | 3.60-4.05 | 7.05-8.05  | 4.62         | 7.40      | 6.07    |
| No. 14         | 3.65-4.10 | 7.10-8.10  | 4.67         | 7.45      | 6.12    |
| No. 16         | 3.75-4.20 | 7.20-8.20  | 4.77         | 7.55      | 6.22    |
| Black          |           |            |              |           |         |
| Nos. 18 and 20 | 4.15-4.80 | 7.80-8.80  | 5.42         | 7.95      | 6.80    |
| Nos. 22 and 24 | 4.20-4.85 | 7.85-8.85  | 5.47         | 8.00      | 6.85    |
| No. 26         | 4.25-4.90 | 7.90-8.90  | 5.52         | 8.05      | 6.90    |
| No. 28         | 4.35-5.00 | 8.00-9.00  | 5.62         | 8.15      | 7.00    |
| Galvanized     |           |            |              |           |         |
| No. 10         | 4.70-6.00 | 8.50-10.00 | 5.97         | 8.50      | 7.15    |
| No. 12         | 4.80-6.10 | 8.60-10.10 | 6.02         | 8.60      | 7.20    |
| No. 14         | 4.80-6.10 | 8.60-10.10 | 6.07         | 8.60      | 7.35    |
| Nos. 18 and 20 | 5.10-6.40 | 8.90-10.40 | 6.37         | 8.90      | 7.65    |
| Nos. 22 and 24 | 5.25-6.55 | 9.05-10.55 | 6.52         | 9.05      | 8.05    |
| No. 26         | 5.40-6.70 | 9.20-10.70 | 6.67         | 9.20      | 8.20    |
| No. 28         | 5.70-7.00 | 9.50-11.00 | 6.97         | 9.50      | 8.50    |

## SHOP SUPPLIES

NUTS—From warehouse at the places named, on fair size orders, the following amount is deducted from list:

|                      | New York | Cleveland | Chicago | St. Louis |
|----------------------|----------|-----------|---------|-----------|
|                      | Current  | Current   | Current | Current   |
| Hot pressed square   | +2.00    | \$1.00    | \$1.25  | \$1.45    |
| Hot pressed hexagon  | +2.00    | 1.00      | 1.05    | 0.78      |
| Cold punched square  | +2.00    | 1.00      | .75     | 1.05      |
| Cold punched hexagon | +2.00    | 1.00      | .75     | 1.05      |

Semi-finished nuts,  $\frac{1}{2}$  and smaller, sell at the following discounts from list price:

|                | Current | One Year Ago |
|----------------|---------|--------------|
| New York.....  | 60%     | 50-10%       |
| Chicago.....   | 50%     | 50%          |
| Cleveland..... | 60-10%  | 50-10%       |
| St. Louis..... | 45%     | ....         |

**MACHINE BOLTS**—Warehouse discounts in the following cities:

|  | New York | Cleveland | Chicago | St. Louis |
|--|----------|-----------|---------|-----------|
| $\frac{1}{2}$ by 4 in. and smaller.....      | 25%      | 50%       | 35-5%   | 50-5%     |
| Larger and longer up to 1 in. by 30 in. .... | 15%      | 40%       | 25-5%   | 40-5%     |

**WASHERS**—From warehouses at the places named the following amount is deducted from list price:

|   | New York | Cleveland | Chicago |
|---|----------|-----------|---------|
| For wrought-iron washers:                                       |          |           |         |
| New York.....   | \$1.50   | \$4.50    | \$3.00  |
| For cast-iron washers the base price per 100 lb. is as follows: |          |           |         |
| New York.....   | \$7.00   | \$3.75    | \$4.25  |

**RIVETS**—The following quotations are allowed for fair sized orders from warehouse:

|                                      | New York | Cleveland | Chicago |
|--------------------------------------|----------|-----------|---------|
| Steel $\frac{1}{2}$ and smaller..... | 30%      | 55% off   | 45%     |
| Tinned.....                          | 30%      | 55% off   | 45%     |

Boiler,  $\frac{1}{2}$ , 1 in. diameter by 2 in. to 5 in. sell as follows per 100 lb.:  
 New York..\$6.00 base Cleveland..\$4.00 Chicago..\$4.97 Pittsburgh..\$4.72  
 Structural, same sizes:  
 New York..\$6.10 Cleveland..\$4.10 Chicago..\$5.07 Pittsburgh..\$4.82

## CONSTRUCTION MATERIALS

**LINSEED OIL**—These prices are per gallon:

|                      | New York | Cleveland    | Chicago |
|----------------------|----------|--------------|---------|
|                      | Current  | One Year Ago | Current |
| Raw, 5-bbl. lots.... | \$1.87   | \$1.55       | \$2.05  |
| 5-gal. cans.....     | 1.87*    | 1.70         | 2.25    |

\*To this oil price must be added the cost of the cans (returnable), which is \$2.25 for a case of six.

**WHITE AND RED LEAD**—Base price.

|                         | Current | Red    | White |
|-------------------------|---------|--------|-------|
|                         | Dry     | In Oil | Dry   |
| 100-lb. keg.....        | 15.50   | 17.00  | 13.00 |
| 25 and 50-lb. kegs..... | 15.75   | 17.25  | 13.25 |
| 12-lb. keg.....         | 16.00   | 17.50  | 13.50 |
| 5-lb. cans.....         | 18.50   | 20.00  | 15.00 |
| 1-lb. cans.....         | 20.50   | 22.00  | 16.00 |

**COMMON BRICK**—The prices per 1000 in cargo or carload lots are as follows:  
 Chicago.....\$14.00 Cincinnati.....\$19.00  
 St. Louis, salmon.....16.00 Birmingham.....15.00

**PREPARED ROOFINGS**—Standard grade rubbered surface, complete with nails and cement, costs per square as follows in New York, St. Louis, Chicago and San Francisco.

|                  | C.I.   | L.C.I. | C.I.   | L.C.I. | C.I.   | L.C.I. |
|------------------|--------|--------|--------|--------|--------|--------|
|                  | 1-Ply  | 2-Ply  | 3-Ply  | 4-Ply  | 5-Ply  | 6-Ply  |
| No. 1 grade..... | \$2.00 | \$2.25 | \$2.50 | \$2.75 | \$3.00 | \$3.25 |
| No. 2 grade..... | 1.70   | 1.95   | 2.15   | 2.40   | 2.50   | 2.75   |

Asbestos asphalt saturated felt (14 lb. per square) costs \$17.00 per 100 lb.  
 Slate-surfaced roofing (red and green) in rolls of 108 sq. ft. costs \$3.00 per roll in carload lots and \$3.25 for smaller quantities.  
 Shingles, red and green slate finish, cost \$7.25 per square in carloads, \$7.50 in smaller quantities, in Philadelphia.

**ROOFING MATERIAL**—Prices per ton f. o. b. New York and Chicago:

|  | Carload Lots | Less Than Carload Lots |
|--|--------------|------------------------|
|  | N. Y.        | Chicago                |
| Tar felt (14 lb. per square of 100 sq. ft.)..... | \$99.00      | \$97.00                |
| Tar pitch (in 400-lb. bbl.).....                 | 25.00        | 22.00                  |
| Asphalt pitch (in barrels).....                  | 40.00        | 40.00                  |
| Asphalt felt.....                                | 98.00        | 98.00                  |

**HOLLOW TILE**—Price per block in carload lots for hollow building tile:

|                  | 4x12x12 | 8x12x12 | 12x12x12 |
|------------------|---------|---------|----------|
| St. Paul.....    | \$0.087 | \$0.158 | \$0.248  |
| St. Louis.....   | .12     | .23     | .31      |
| Seattle.....     | .09     | .175    | .30      |
| New Orleans..... | .165    | .22     | .325     |
| Pittsburgh.....  | .065    | .115    | .....    |
| Chicago.....     | .1194   | .2122   | .....    |
| Cincinnati.....  | .101    | .18925  | .2864    |
| Birmingham.....  | .126    | .224    | .....    |

**LUMBER**—Price of pine per M in carload lots:

|                 | 1-In. Rough     | 2-In. T. and G. | 8 x 8 In. x 20 Ft. |
|-----------------|-----------------|-----------------|--------------------|
|                 | 10 In. x 16 Ft. | 10 In. x 16 Ft. | 10 In. x 16 Ft.    |
| St. Louis.....  | \$53.00         | \$46.00         | \$42.00            |
| Birmingham..... | 59.00           | 60.00           | 70.00              |
| Cincinnati..... | 60.00           | 60.00           | 55.00              |

**EXPLOSIVES**—Price per pound of dynamite in small lots and price per 25-lb. keg for black powder:

|                  | Low Freezing | Gelatin | Black Powder |
|------------------|--------------|---------|--------------|
|                  | 20%          | 60%     | 80%          |
| New York.....    | \$3.45       | \$3.45  | \$2.30       |
| Boston.....      | \$0.225-24   | .245-28 | .25-31       |
| Kansas City..... | .235         | .26     | .385         |
| New Orleans..... | .2375 (50%)  | .2275   | .2475        |
| Seattle.....     | .18          | .2175   | .2475        |
| Chicago.....     | .2175        | .2525   | .2975        |
| St. Paul.....    | .185         | .2275   | .2525        |
| St. Louis.....   | .2175        | .26     | .285         |
| Los Angeles..... | .25          | .30     | .35          |

## MISCELLANEOUS

**GREASES**—Prices are as follows in the following cities in cents per pound for barrel lots:

|                      | Cincinnati | St. Louis | Birmingham |
|----------------------|------------|-----------|------------|
| Cup.....             | 8.5        | 3.7-3.8   | 8.5        |
| Fiber or sponge..... | 8.5        | 7.2       | 8.5        |
| Transmission.....    | 10         | 14        | 8.5        |
| Axle.....            | 5          | 5         | 4.5        |
| Gear.....            | 6.5        | 6.5       | 8.5        |
| Car journal.....     | 12.0       | 4.7       | 8.5        |

**BABBITT METAL**—Warehouse prices in cents per pound:

|                 | New York | Cleveland    | Chicago |
|-----------------|----------|--------------|---------|
|                 | Current  | One Year Ago | Current |
| Best grade..... | 90.00    | 87.00        | 70.00   |
| Commercial..... | 50.00    | 42.00        | 20.00   |

**HOSE**—Following are prices of various classes of hose:

|                          | Fire        | 50-Ft. Lengths |
|--------------------------|-------------|----------------|
|                          | First Grade | Second Grade   |
| Underwriters' 2½-in..... | \$0.55      | \$0.35         |
| Common, 2½-in.....       | .....       | .....          |
| 1-in. per ft.....        | .....       | .....          |
| First grade.....         | 2%          | 3%             |
| Second grade.....        | .....       | 40%            |

**LEATHER BELTING**—Present discounts from list in cities named:

|                 | Medium Grade | Heavy Grade |
|-----------------|--------------|-------------|
| New York.....   | 20%          | 10-3%       |
| St. Louis.....  | 40%          | 35%         |
| Birmingham..... | 35%          | 30%         |
| Chicago.....    | 45%          | 40%         |
| Cincinnati..... | 30-5         | 24%         |

**RAWHIDE LACING**—For cut, best grade, 25%, 2nd grade, 30%.  
 For laces in sides, best, 81%.

**PACKING**—Prices per pound:

|  |        |
|--|--------|
| Rubber and duck for low-pressure steam.....  | \$1.00 |
| Asbestos for high-pressure steam.....  | 1.70   |
| Duck and rubber for piston packing.....  | 1.00   |
| Flax, regular.....   | 1.20   |
| Flax, waterproofed.....  | 1.70   |
| Compressed asbestos sheet.....   | .90    |
| Wire insertion asbestos sheet.....   | 1.50   |
| Rubber sheet.....  | .50    |
| Rubber sheet, wire insertion.....  | .70    |
| Rubber sheet, duck insertion.....  | .50    |
| Rubber sheet, cloth insertion.....   | .30    |
| Asbestos packing, twisted or braided, and graphited, for valve stems and stuffing boxes..... | 1.30   |
| Asbestos wick, ½- and 1-lb. balls.....   | .85    |

**MANILA ROPE**—For rope smaller than ½-in. the price is ½ to 2c. extra: while for quantities amounting to less than 600 ft. there is an extra charge of 1c. The number of feet per pound for the various sizes is as follows: ½-in., 8 ft.; ¾-in., 6; 1-in., 4; 1½-in., 3½; 2-in., 2½; 2½-in., 2; 3-in., 1½; 3½-in., 1; 4-in., ¾; 4½-in., ¾; 5-in., ¾; 5½-in., ¾; 6-in., ¾; 6½-in., ¾; 7-in., ¾; 7½-in., ¾; 8-in., ¾; 8½-in., ¾; 9-in., ¾; 9½-in., ¾; 10-in., ¾; 10½-in., ¾; 11-in., ¾; 11½-in., ¾; 12-in., ¾; 12½-in., ¾; 13-in., ¾; 13½-in., ¾; 14-in., ¾; 14½-in., ¾; 15-in., ¾; 15½-in., ¾; 16-in., ¾; 16½-in., ¾; 17-in., ¾; 17½-in., ¾; 18-in., ¾; 18½-in., ¾; 19-in., ¾; 19½-in., ¾; 20-in., ¾; 20½-in., ¾; 21-in., ¾; 21½-in., ¾; 22-in., ¾; 22½-in., ¾; 23-in., ¾; 23½-in., ¾; 24-in., ¾; 24½-in., ¾; 25-in., ¾; 25½-in., ¾; 26-in., ¾; 26½-in., ¾; 27-in., ¾; 27½-in., ¾; 28-in., ¾; 28½-in., ¾; 29-in., ¾; 29½-in., ¾; 30-in., ¾; 30½-in., ¾; 31-in., ¾; 31½-in., ¾; 32-in., ¾; 32½-in., ¾; 33-in., ¾; 33½-in., ¾; 34-in., ¾; 34½-in., ¾; 35-in., ¾; 35½-in., ¾; 36-in., ¾; 36½-in., ¾; 37-in., ¾; 37½-in., ¾; 38-in., ¾; 38½-in., ¾; 39-in., ¾; 39½-in., ¾; 40-in., ¾; 40½-in., ¾; 41-in., ¾; 41½-in., ¾; 42-in., ¾; 42½-in., ¾; 43-in., ¾; 43½-in., ¾; 44-in., ¾; 44½-in., ¾; 45-in., ¾; 45½-in., ¾; 46-in., ¾; 46½-in., ¾; 47-in., ¾; 47½-in., ¾; 48-in., ¾; 48½-in., ¾; 49-in., ¾; 49½-in., ¾; 50-in., ¾; 50½-in., ¾; 51-in., ¾; 51½-in., ¾; 52-in., ¾; 52½-in., ¾; 53-in., ¾; 53½-in., ¾; 54-in., ¾; 54½-in., ¾; 55-in., ¾; 55½-in., ¾; 56-in., ¾; 56½-in., ¾; 57-in., ¾; 57½-in., ¾; 58-in., ¾; 58½-in., ¾; 59-in., ¾; 59½-in., ¾; 60-in., ¾; 60½-in., ¾; 61-in., ¾; 61½-in., ¾; 62-in., ¾; 62½-in., ¾; 63-in., ¾; 63½-in., ¾; 64-in., ¾; 64½-in., ¾; 65-in., ¾; 65½-in., ¾; 66-in., ¾; 66½-in., ¾; 67-in., ¾; 67½-in., ¾; 68-in., ¾; 68½-in., ¾; 69-in., ¾; 69½-in., ¾; 70-in., ¾; 70½-in., ¾; 71-in., ¾; 71½-in., ¾; 72-in., ¾; 72½-in., ¾; 73-in., ¾; 73½-in., ¾; 74-in., ¾; 74½-in., ¾; 75-in., ¾; 75½-in., ¾; 76-in., ¾; 76½-in., ¾; 77-in., ¾; 77½-in., ¾; 78-in., ¾; 78½-in., ¾; 79-in., ¾; 79½-in., ¾; 80-in., ¾; 80½-in., ¾; 81-in., ¾; 81½-in., ¾; 82-in., ¾; 82½-in., ¾; 83-in., ¾; 83½-in., ¾; 84-in., ¾; 84½-in., ¾; 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326½-in., ¾; 327-in., ¾; 327½-in., ¾; 328-in., ¾; 328½-in., ¾; 329-in., ¾; 329½-in., ¾; 330-in., ¾; 330½-in., ¾; 331-in., ¾; 331½-in., ¾; 332-in., ¾; 332½-in., ¾; 333-in., ¾; 333½-in., ¾; 334-in., ¾; 334½-in., ¾; 335-in., ¾; 335½-in., ¾; 336-in., ¾; 336½-in., ¾; 337-in., ¾; 337½-in., ¾; 338-in., ¾; 338½-in., ¾; 339-in., ¾; 339½-in., ¾; 340-in., ¾; 340½-in., ¾; 341-in., ¾; 341½-in., ¾; 342-in., ¾; 342½-in., ¾; 343-in., ¾; 343½-in., ¾; 344-in., ¾; 344½-in., ¾; 345-in., ¾; 345½-in., ¾; 346-in., ¾; 346½-in., ¾; 347-in.,